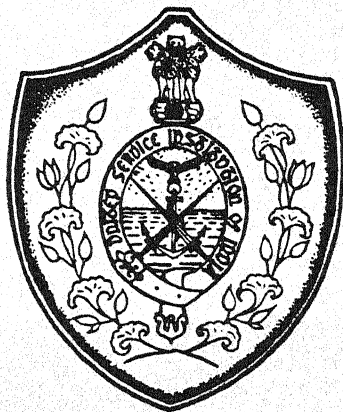


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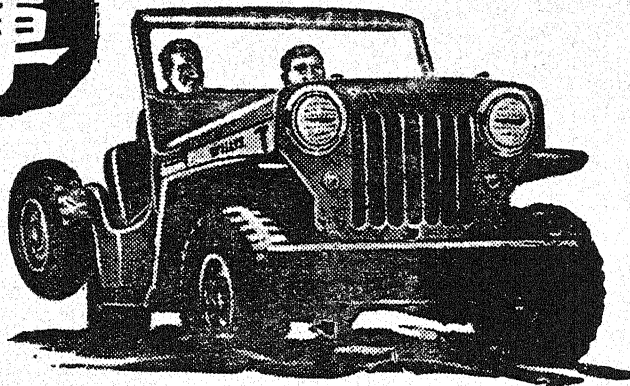
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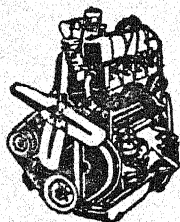


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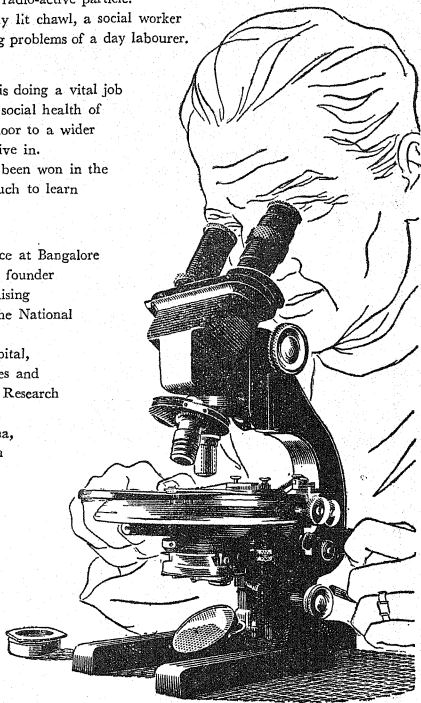
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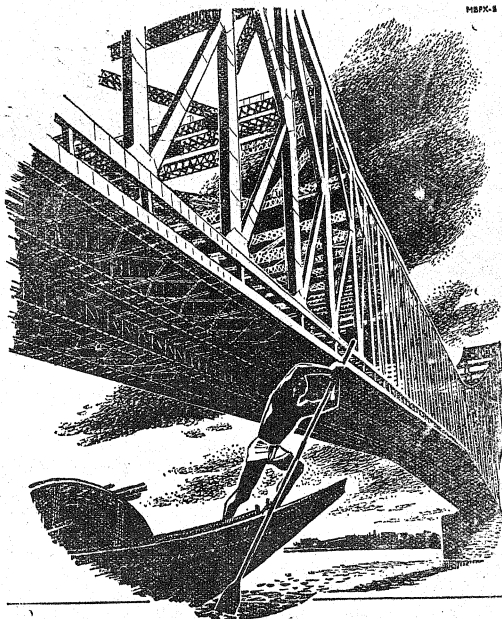


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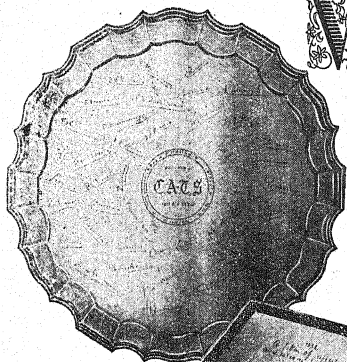
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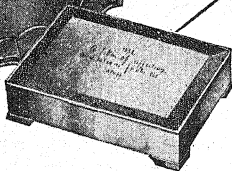
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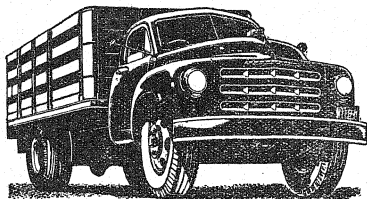
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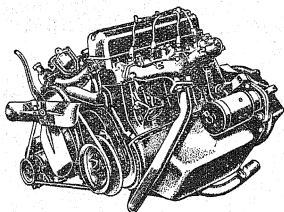
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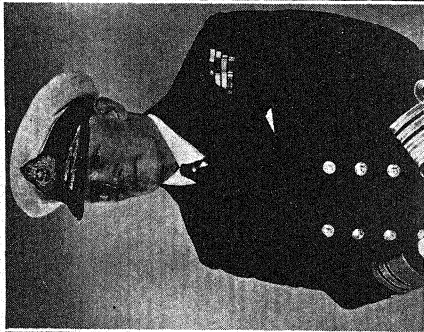


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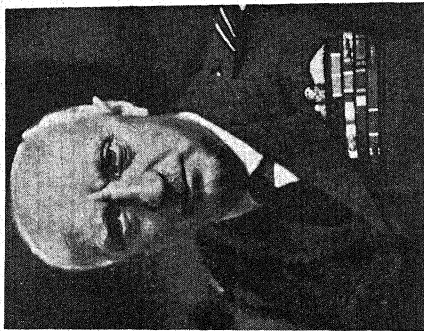
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The Journal of the United Service Institution of India

Vol. LXXXIV

JANUARY 1954

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EDITORIAL NOTES

The Journal

In reverting to quarterly issues with this number, it is hoped our readers will find the Journal approximating more closely to its role as the vehicle of thought of the Institution it represents. The lectures and discussions which now provide half the reading matter have largely contributed to this desired result. The Journal has a distinctive character of its own as the organ and common forum of a society whose aim is the promotion of knowledge in defence and allied subjects on an inter-service level.

Readers are invited to write more articles which will further this common task. The effort is always rewarding.

Indian Custodian Force

In our Editorial columns of the last issue we wished success to the members of our Custodian Force then proceeding to Korea. That they have carried out their duties in the

highest traditions of our Armed Forces, none will contest. In the world's capitals the names of Generals Thimayya and Thorat have become as well known as those of most other great contemporary military leaders. Their's has been a mission of peace, of patience and humanity. This is the first time that our soldiers have come into individual prominence in the world press.

As for the Custodian Force itself, it has made history in Korea. Not only by its attitude of complete impartiality but also by its efficient and courageous handling of an extremely difficult situation, the Indian Custodian Force has once again brought India's Armed Forces to the forefront—where it had been accustomed to remain during two world wars. Even those countries who have not always been in sympathy with our general policy have never grudged us their admiration of the Indian Custodian Force.

Defence Trends in the West

Recent trends in international relations have undoubtedly relaxed the nervous strain under which military planners of the West have so far been working. The shooting war in Korea has stopped; the British fears of large-scale commitments in Egypt and Kenya have to a certain extent proved unnecessary; the picture in Malaya has never looked so rosy since 1947. It is, therefore, only to be expected that the armies of Western Powers are now looking around for ways and means of reducing their defence budgets.

After completing a thorough examination of its defence plans and commitments, the U.S.A. has effected a reduction of five thousand million dollars in this year's arms budget. It has brought back two divisions from Korea and cut all-round Service manpower by 10 per cent. In doing this, the U.S.A. has remoulded its strategy with an unprecedented emphasis on air power and atomic weapons.

In Britain no clear indication of future defence policy has yet been given. If the recommendations of the Select Committee on Estimates are to be a general indication of the way in which Her Majesty's Government are thinking, then it would appear that Britain at least is not suffering from the war scare which is crippling so much constructive activity in

certain parts of Europe. The Select Committee has reported in unfavourable terms on the Civil defence programme, the vulnerability of the British Isles in the event of war notwithstanding.

This is not to say that British military planners are sitting back in smugness and complacency. In many ways Britain still gives the lead in military thinking, if not always in technology. It is only that the British military planners have not so far taken the nation into their confidence. Unlike in America, the public is not reassured that the Chiefs of Staff or the Defence Committee know what they are going to do.

Atomic Dilemma

Immediately after the Bermuda Conference, President Eisenhower addressed the United Nations General Assembly, at the invitation of the Secretary General, on 8th December 1953. The essence of his speech was a plea for the international control and development of atomic energy for peaceful purposes under the aegis of the U.N. The alternative for mankind in the event of another world war is too hideous to contemplate. To quote passages from the speech:—

"On July 16, 1945, the U.S. set off the world's first atomic explosion. Since that date in 1945, the United States of America has conducted 42 atomic test explosions. Atomic bombs today are more than 25 times as powerful as the weapons with which the atomic age dawned, while hydrogen weapons are in the ranges of millions of tons of TNT equivalent. Today, the United States' stock-pile of atomic weapons, which of course increases daily, exceeds by many times the explosive equivalent of the total of all bombs and all shells that came from every plane and every gun in every theatre of war in all the years of World War II. A single air group whether afloat or land-based can now deliver to any reachable target a destructive cargo exceeding in power all the bombs that fell on Britain in the whole of World War II. In size and variety the development of atomic weapons has been no less remarkable. This development has been such that atomic weapons have virtually achieved conventional status within our armed services. In the United States, the Army, the Navy, the Air Force, and the Marine Corps are all capable of putting this weapon to military use.

But the dread secret and the fearful engines of atomic might are not ours alone."

"Occasional pages of history do record the faces of the great destroyers, but the whole book of history reveals mankind's never-ending quest for peace and mankind's God-given capacity to build."

..... "if the fearful trend of atomic military build-up can be reversed, this greatest of destructive forces can be developed into a great boon, for the benefit of all mankind."..... "peaceful power from atomic energy is no dream of the future. That capability, already proved, is here now, today" " Experts would be mobilized to apply atomic energy to the needs of agriculture, medicine, and other peaceful activities. A special purpose would be to provide abundant electrical energy in the power-starved areas of the world."

Although an atomic submarine can hardly be described as for peaceful purposes, the launching of the "Nautilus" which is now on trials illustrates that the research entailed in the construction of its power plant can be directly applied to peaceful ends. An atomic propulsion unit has been found practicable for the first time. It is claimed that the submarine's nuclear reactor could furnish enough electricity for the requirements of a small town. The sooner this aspect of the mastery over the atom is exploited and developed to supply energy to the power-starved regions of the earth, the lesser will be the chances of another world war. Statesmen have the awful choice between "supreme catastrophe and measureless reward".

Two copies are required of all articles sent to the Editor. These should be typewritten with double-spacing, and on one side of the paper.

NAVAL AVIATION

CAPTAIN J.E. SMALLWOOD, R.N.

Lecture on Tuesday 3rd November 1953

[With Major-General J.N. Chaudhuri, OBE, in the Chair]

THE CHAIRMAN: There was a little controversy as to who would introduce the speaker today. We felt that an officer of the Navy might put the case for the Navy a little too strongly, and similarly an Air Force officer might stress the importance of the Air Force perhaps subjectively. So I have stepped into the breach and have great pleasure in introducing Captain Smallwood. He is Chief of Naval Aviation at Naval Headquarters, and nobody could be more fitted to talk on the subject of 'Naval Aviation' than he. I have always maintained that the air is not the sole prerogative of the Air Force, and I would say that in England more than anywhere else the Navy seemed to have realised the importance of Naval Aviation shortly before the World War of 1914-18. We shall now hear about the new developments made in naval aviation from Captain Smallwood.

LECTURE

IN this lecture I shall confine myself in the main to the practice of Aviation in the Royal Navy, drawing occasional parallels with corresponding practice in other Navies so far as it is known to me. As you all know, Naval Aviation in the Indian Navy is in its infancy, and its future progress is a matter for the Government to decide. I do not, therefore, intend to impinge on this aspect today at all.

We are now about half-way through the 20th century, but the professional sailor has already had to contend with two major convulsions in the conduct of sea warfare, the first brought about by the submarine, and the second by the intrusion, into what was formerly an exclusively Naval province, of the flying machine.

Both these convulsions brought far-reaching changes in the strategy and tactics of Naval warfare, the first during World War I, and the second during World War II.

WAR EXPERIENCE

The start of World War II found the British Navy with its Aviation in a decidedly half-fledged state. It had only just become administratively independent of the R.A.F. and in its combatant role was deemed subsidiary to the conventional Naval weapons of the gun and the torpedo.

If a typical senior officer of the pre-war period had been invited to define the task of Naval Aviation, he would probably have said that it might be useful in finding the enemy and perhaps in crippling a few ships in order to permit their destruction, and that of the Fleet screening them, by conventional surface ship action. Even in the reconnaissance role the aircraft was considered as an adjunct to conventional reconnaissance by cruiser screens disposed ahead of the Fleet. Some rather inferior fighters were to be used for fleet defence, but no serious attempt had been made to rationalise the means for their proper direction and it was generally felt that they would only get in the way of ships' anti-aircraft gun armament for which decidedly optimistic claims were made.

Naturally these ideas did not long survive the test of war. Norway, Dunkirk, and Crete on the debit side, and Taranto, the Bismark action, and the Malta Convoys on the credit side, were sufficient, as well they might be, to produce conviction that a Fleet without Aircraft Carriers could not safely venture out of sight of its main base.

All this experience gave rise to several clear lessons upon which to base the future size and shape of the fleet, with its air arm in due perspective.

LESSONS LEARNT

The paramount lesson was that fleets, and the shipping they are designed to protect, cannot keep the seas in the face of the air threat unless provided with adequate air protection. For reasons connected with the fundamental economics of shore-based fighter protection, the air protection of shipping, except in coastal shipping lanes over which we possess a decisive degree of air superiority, can only be provided by aircraft operating from ships located with, or close to, the formations they are to protect.

Other subsidiary but important lessons were also forced upon us. We learnt that the striking power of Naval aircraft should not be regarded as auxiliary to the guns and torpedoes of the Fleet but as the Fleet's primary weapon. We also learnt that the flexibility of operation of Naval aircraft was almost embarrassingly great so that Naval Aviation was in constant demand to protect and support the ground forces in circumstances when shore-based aviation could not perform the task.

We also learnt that in anti-submarine warfare Naval Aircraft, often acting in close co-operation with long range shore-based aircraft, were a major factor in the battle against U-boats, both by direct action against them and by their ability to destroy the reconnaissance aircraft whose task it was to find targets for the U-boats themselves.

Finally, we learnt that in certain geographical conditions naval aviation could prove a powerful agent of strategic air warfare.

THE TASKS

Translated into terms of tasks these lessons led us to conclude that the main tasks of Naval Aviation were as follows:—

- (a) The protection of naval forces and shipping against the air and U-boat threats.
- (b) The destruction of enemy warships and shipping.
- (c) The support of amphibious operations.
- (d) Direct strategic air action.

Subject to favourable conditions of geography all the above may be carried out effectively either by shore or by carrier based aviation. In terms of economy, some of them may better be performed by shore based aviation within its effective range, and some by carrier based aviation.

For example, British naval philosophy readily concedes that in the overwhelming majority of examples the correct agent for the strategic air offensive is the long-range bomber, although I may say that the U.S. Navy seems to have other views on this point. To quote from the statement of the U.S. Secretary of the Navy for Air:—

“The technological revolution wrought by the turbo-jet engine has made us more dependent than ever on off-shore bases to carry

the fight to the enemy. The only offshore bases I can guarantee will be available when the chips are down are those provided by the Fast Carrier Task Forces."

In other directions, however, the effectiveness of shore-based aviation is in certain circumstances drastically curtailed. For example, shore-based fighter protection cannot be extended even to cover effectively inshore shipping routes unless a system of continuous fighter patrols operating from a chain of airfields is provided all along the route. The economic implications of such a patrol system are enormous and indeed prohibitive. In any case, the major proportion of the international shipping routes lies well outside such fringe protection while in very many cases lying well within range of long-range offensive air action from continental bases.

EXAMPLES IN ACTION

Notable examples of carrier air protection of shipping are the Malta and Murmansk convoys. Of the former one example, Operation Pedestal, may perhaps be cited with advantage. In this operation the convoys, with air cover provided by two aircraft carriers, was for some 48 hours within range of some 500 bombers and torpedo bombers and their fighter escorts trained in anti-shipping work and especially concentrated to cut the Malta convoy route. In spite of very numerous attacks by this force, not a ship was lost to air attack throughout the period of carrier air cover.

The Murmansk convoys provide a simultaneous example of convoy protection by carriers against both air and submarine attack.

At first these convoys, which were within air range of a Luftwaffe force of some 400 bomber, fighter and reconnaissance aircraft throughout 1000 miles of their route between the coast of Norway and the ice pack, were run without carrier air cover. The losses from U-boat and air attack during this period were appalling. Later, when one or two escort type carriers could be spared for each convoy, losses were immediately greatly reduced, indeed many convoys reached Murmansk intact.

Besides the obvious protection provided by fighters against Bomber and Torpedo bomber attack, these convoys dramatically demonstrated the value of aircraft in anti-submarine operations. By keeping the U-boats submerged and by destroying their air reconnaissance, the occasions on which U-boats were able to make or maintain contact with the convoys were

radically reduced. On numerous occasions also our anti-submarine aircraft were successful in the direct destruction of U-boats, apart from the occasions when they directed surface anti-submarine vessels on to U-boats which they subsequently destroyed.

In the role of destruction of enemy naval forces perhaps the outstanding British example is the sinking or disablement of the bulk of the Italian Fleet at Taranto at the cost of only two aircraft lost and four aircraft casualties. As an example of economy of force Taranto is difficult to equal. Naval aircraft also played a vital role in the sinking of the German Battleship *Bismark* by securing torpedo hits which slowed her down and finally left her out of control, an easy prey to surface action.

Nevertheless, it is to the great naval battles of the Pacific, Coral Sea, Midway, and the Marianas that we must turn to see the full development of Naval Aviation as a decisive anti-shipping weapon.

One of these battles, Midway, is historic as being the first major naval action in which the surface opponents never saw each other, yet it turned the whole course of the Pacific War in the Allied favour.

I now turn to the third role, the protection and support of ground forces in amphibious operations. In sea flank operations, or assault operations in support of the Army, in which the water gap exceeds about 100 miles, Naval Aviation in support of land forces becomes highly desirable, or in the latter case, essential. In the latter circumstances, shore-based aviation cannot provide the intimate and immediate tactical support and protection demanded by the ground forces, and in such cases carrier aviation is essential until the Air Force is able to establish itself, either on captured airfields or airfields constructed after the assault forces have established themselves. Examples of carrier support of ground forces are numerous, but Leyte Gulf, Okinawa, Iwo Jima, Salerno and the South of France may be cited.

The last role to be considered is that of strategic air action. The need for this as an isolated form of air action by maritime aviation is perhaps now less than in World War II when the U.S. carrier forces, later joined by British Task Force 57, struck repeatedly against the Japanese mainland in a long series of operations, because the target was out of range of strategic shore-based aviation. The increasing range of long-range bomber forces virtually puts every target in the globe within their range. Thus, I believe

that strategic air action of this kind should be regarded as the prerogative of the long-range bomber force. As already indicated the British concept appears to be at variance with that of the United States Navy. The latter have embarked on the construction of enormous aircraft carriers whose function appears to be to operate aircraft in a strategic role.

THE LESSONS SUMMARIZED

To summarize, air action, whether shore based, or carrier based, is clearly an integral part of sea warfare. This was most forcibly confirmed by all the experience of the major maritime powers in World War II. Occasional failure to appreciate this fundamental concept invariably resulted in disastrous episodes for the Navy concerned.

Maritime air power may be exercised by carrier or shore-based aviation, but however exerted must be subject to co-ordinated operational control by a single Service. Since the sea is its business and it is the prime user of maritime aviation, this Service should presumably be the Navy, as was the case in U.K. during World War II.

It is a matter of controversy, however, whether the shore based component of maritime aviation corresponding to the Coastal Command of the R.A.F. should be manned and administered by the land air force, as in India and the U.K., or by the Navy as in the United States and all other major maritime nations, but I do not intend to pursue this line of controversy here.

So far I have discussed in a general way the functions of maritime aviation as generally interpreted by the major naval powers but with variations of emphasis on the naval contribution.

We have considered the WHY of Naval Aviation. I would like now to turn our attention to the question of HOW. That is to say, the means whereby Naval Aviation produces what is required of it.

PROBLEMS OF OPERATION

In its essence an aircraft carrier is a kind of highly mobile airfield mounted on a ship. Because of the inherent space limitations of such an arrangement, many devices have to be incorporated to enable aircraft to operate from it with safety and efficiency.

However, up to 1935, the only significant variations in technique between shore and carrier based operation were that in order to reduce the relative speed of the aircraft in relation to the deck during landings and take offs, the carrier had to steam into wind to give a speed of some 25 knots over the deck. In effect, this increased the length of the deck runway. After landing, the aircraft, having folded their wings, had to be lowered by lifts into the hangar before the next could land. The operating cycle in these conditions was slow since it depended on the time taken to fold an aircraft's wings, place it on the lift, lower the lift to the hangar, remove the aircraft, and return the lift to the deck.

This technique of operation was known as the "Clear Deck" system.

As aircraft approach speeds rose, the apparent increase of runway length produced by the carrier steaming into wind became insufficient, and a further device was resorted to in the shape of arrester wires. These wires, stretched just above the deck, are connected with a series of hydraulic cylinders and when engaged by the special hooks fitted in Naval aircraft retard the aircraft with a constant strain bringing it to rest in a few yards.

The next development was to fit safety barriers ahead of the arrester wires in the form of vertical wire nets stretched between supporting pillars capable of rapid raising and lowering by hand-controlled hydraulic machinery.

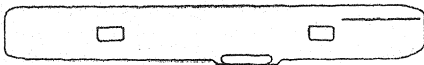
These barriers were capable of stopping in a few yards any aircraft which through bad landing or action damage might miss the arrester wires. The fitting of these barriers had further effects of great significance. By isolating about one-third of the flight deck ahead of the barriers from landing operations this area could be used for parking aircraft and thus it enabled the rate of landing itself to be raised because this now became independent of the lift-operating cycle. Thus, it improved the fighting efficiency of the carrier which was able carry more aircraft and to operate them at higher intensity.

This method of operation is known as the "Barrier System" and it lasted throughout World War II until the present time.

It has now become apparent that future generations of swept wing Jet aircraft will have weight and approach speed characteristics beyond the capacity of the standard barrier-arrester wire combination, for there is a practical limit to the harshness with which aircraft can be brought to rest.

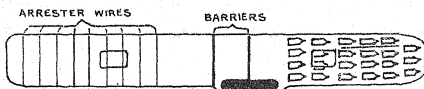
CLEAR DECK

①



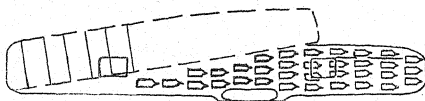
BARRIER DECK

②



ANGLED DECK

③



The solution to this predicament appears to be the so-called "Angled Deck", a British invention which is likely to be embodied in all carriers now under construction and ultimately as a modification in most of those now in commission. It has already been adopted by the U.S. Navy.

In the Angled Deck configuration the landing path is set at a slight angle to the flight deck, about 9 degrees. By doing this we obtain the advantage of the clear deck and barrier doctrines without their disadvantages. We can afford to do away with barriers, arrester wire pull-outs can be made much longer and thus less harsh, while leaving a larger area of deck than before available for stowing aircraft. Also the Pilot has a clear approach uncomplicated by the unnerving vision of barriers and aircraft ranged directly ahead of him as he tries to concentrate on his landing.

Just as in the case of landing, the technique for taking aircraft off carriers, or launching them as we refer to this operation, was formerly the same as for shore-based aircraft, except for the feature of the built-in 30 knot wind down the runway provided by the combination of natural wind and ship's speed. Just as in the case of landing, developments in aircraft characteristics came to demand modifications in take off technique and nowadays almost all operationally loaded aircraft are launched by pneumatically operated catapult. This is not only necessary from considerations of take off run, with weapon and fuel load, but is more convenient in other respects and is actually safer.

The pneumatic catapult in turn is now considered to have reached its limit of useful development and is being replaced by the steam catapult, a comparatively simple device, making use of ship's steam and capable of great flexibility and speed of operation, including the ability to launch much heavier aircraft at higher speeds.

While on the subject of the deck operation of aircraft I should perhaps mention one other salient feature in this connection. This is that all landings in the barrier technique are controlled by what is known as the "Landing Signals Officer." This officer stands on a platform at the after end of the flight deck on the port side and by means of signals conveyed by a kind of semaphore, using pingpong bat-like objects, instead of flags, he controls the final stages of the aircraft's approach to the deck. This visual controlled approach feature, much resisted in the early days of its introduction by the more experienced and conservative pilots, has proved essential in producing an easily taught standard technique of carrier landing.

DIVERGENCE FROM SHOREBASED PRACTICES

At this stage you will no doubt have noticed that the practice of Naval Aviation, in its early stages so similar to that of conventional shore based aviation, has under the impact of technical development, steadily diverged along separate paths. This applies not only to basic aircraft operations, such as we have discussed, but also to many aspects of training tactics and the practice of aircraft handling, servicing and maintenance, in all of which distinct naval doctrines have emerged. Perhaps I may express the pervading theme as that, space in an aircraft carrier being at a high premium it is the quality of the personnel that counts. You can minimise numbers if the quality is kept high.

With all this divergence you may wonder whether naval aircraft are not predestined to be inferior or possibly superior in their performance to their shore-based counterparts. The answer in either case is an emphatic 'no'. It is true that the technique of deck operation imposes weight penalties on aircraft in the form of some extra equipment and stressing, but in terms of performance this amounts to 2 per cent or less in the various categories by which performance is judged.

The undeniable fact that in general in the past, British naval fighters, to take the most easily comparable example, have lagged in performance compared with those of the R.A.F., is almost entirely due to features of the policy governing relative priorities and procurement. It is emphatically not due to fundamental technical factors. These policies have recently been the subject of much Parliamentary criticism in the U.K., and have received the attention of a Select Committee. As a result of the recommendations of this Committee, a considerable reorganisation has occurred in the procurement channels for Naval aircraft. We may therefore hope to see future generations of naval fighters of comparable performance with those of the R.A.F., being sometimes of superior and sometimes of inferior performance in accordance with what I might call the "leap frog" principle, which is discernible, for instance, in comparisons between the U.S. Naval and Air Force fighters. Incidentally, the world's air speed record is currently held by a naval fighter prototype.

A few words now about the actual aircraft used in Naval Aviation. Today I have time only to give a brief sketch of the main features of the operational types in use and projected.

THE AIRCRAFT

Let us first consider what we need in the anti-submarine role. We need an aircraft to find surface or snorting U-boats at considerable distances and so it must carry high-powered radar of high discrimination. It must have good endurance for search and at the same time a good turn of speed in order to close the submarine contact rapidly before starting to track it submerged. Once the submarine is submerged, it must be able to keep track of it, and so it will need Sono buoys or similar devices with associated electronic equipment. We should also like it to carry an anti-submarine weapon rather than that it should rely on other aircraft to perform the actual kill.

The Royal Navy have endeavoured to combine the search, tracking, and striking features in a single aircraft, the Fairey Gannet. This aircraft has a double gas turbine engine independently driving contra-propellers. One engine is used for economical cruising, but both are employed to close the position of a submarine contact at high speed.

For the anti-submarine role Helicopters are also a strong probability for the future. Their ability to hover could obviously be employed to operate light asdic equipment and their mobility could be used in conjunction with this equipment to provide a highly efficient and economical type of anti-submarine patrol or search.

Next, the fighter role. Until recently it was an accepted feature of Naval fighter protection that in conditions of air threat to the Fleet fighter cover was provided in the form of continuously airborne patrols with reinforcements at readiness on deck. This system was precariously expensive, even in the petrol engine fighter era, but the introduction of the pure jet fighter with its voracious appetite for fuel and short endurance has focussed naval thought sharply towards the possibility of direct interception from the deck. The main difficulty here is that the proposition of providing protection for a Fleet, of which the carrier is itself an integral part, cannot be solved by favourable deployment of the fighter base in relation to the vulnerable point to be protected as in the case of the conventional air defence system employed ashore.

A fighter of phenomenal performance in respect of climb to operating height is therefore called for. Current naval interest centres on the Vickers Super Marine 508 for which, in its swept wing version I un-

derstand naval orders have already been placed. In the mean time, the standard naval fighter will be the interim Vickers Super Marine Attacker, already being replaced by the Sea Hawk, with the Venom as the standard all weather fighter. All these are modern jet aircraft.

The other side of the problem of timely interception of attacking formations before weapon release is that of radar warning. If we could get longer warning, the chances of effecting reliable interception from fighters on the deck might become very fair, even with existing fighters, and excellent with the next generation of fighters. The solution to this aspect of the dual problem is to provide our warning radar with extra range by making it airborne. For this purpose the Royal Navy have acquired U.S. Skyraider aircraft mounting very powerful airborne radar, capable not only of greatly extending the range of the Fleet's air warning cover but also of efficient aircraft direction, and incidentally, in the present context, of detecting snorting submarines.

The last aircraft fighting role to be considered is the strike role. Broadly this role divides into strikes against ships and strikes against shore targets, and it would obviously be most convenient if the same type of aircraft could be used effectively for both. To fulfil this difficult criterion, a strike aircraft needs high speed to minimise the occasions on which fighter escort must be provided and also to reduce its vulnerability to anti-aircraft fire. It must be able to carry a reasonable and versatile weapon load to enable it to sink ships on the one hand and to destroy shore targets on the other.

The Westland Wyvern with a turbo-prop engine driving contra-propellers, now in Squadron service with the Royal Navy, will meet most of these requirements. Incidentally, it should make an excellent ground attack aircraft in support of the Army.

THE SHIPS

So much for the aircraft. I now come to my last heading on the material side—the Aircraft Carriers themselves. These are of three types. First, the great Fleet Carriers, such as, *Eagle* and *Ark Royal*, with their armoured decks, heavy scale of A.A. armament and ability to take heavy punishment while continuing to deal it out. The idea that aircraft carriers are too delicate and precious to risk dies hard, but believe me, it is a bit of a myth.

Next, the Light Fleet Carriers such as, *Centaur*, and *Hermes*, with unarmoured decks, but in all other respects capable of working with the Fleet.

Lastly, the Escort Carriers, often merchant ship conversions and always of light construction and rather slow. The operational feasibility of these ships in World War II was marginal and their future, except as the means of ferrying aircraft around the world, is, I would say, problematical.

So much for material, now a few words about the men who make it all work.

THE MEN

All combatant flying is a young man's job, and particularly I suggest that aspect which involves the high degree of fitness and sense of co-ordination required to put the modern fighter on to a Carrier's deck. This being so, it is obvious that naval flying cannot offer a permanent career with reasonable career prospects to an unduly high proportion of junior officers. The Aviation Aircrew cadre, therefore, calls for a balance between short and long service officers. I would like to emphasise that what I say applies to a stabilised cadre but not necessarily to one which is expanding from a standing start.

The Royal Navy have experimented with rating or N.C.O. pilots, but experience has shown that the expense and intricacy of modern aircraft, no less than the great responsibilities which at times devolve upon their aircrew, call for officers, and of high quality at that.

So much for officers. As far as the men are concerned, the bulk of Naval Aviation manpower is taken up in the maintenance force and in the aircrew handling categories.

In the former, the maintenance force, the Navy has introduced what is a rather novel principle in the aircraft maintenance field. Briefly, we train Airframe, Engine, and Ordnance categories to a single basic trade, and initially to qualify in the servicing of one type of aircraft. We believe this system gets the men on to the job quicker, having absorbed all the knowledge they can usefully employ for the time being. Their training continues during their service in Squadrons and as time goes on they qualify in further types of aircraft and the more ambitious and intelligent assimilate further trades.

ORGANISATION

My last heading is Organisation. Here the pattern changes rapidly and it is difficult to be right up to date. This is particularly true of the internal organisation of the Aircraft Carrier herself and of her Squadrons. The main reason is that there is some conflict of requirements for peace and war. In the twilight state of international relations such a quandary is perhaps understandable. So, I will leave aside the internal organisation of Aircraft Carriers and go on to describe the external relations aspect of Naval Air Organisation.

The seaborne or operational element of Naval Aviation has, of course, to be backed by a very considerable shore-based organisation.

The main shore-based activities required to support the seaborne element are training, both flying and ground training, and an organisation to deal with reserve aircraft, including the operations of major overhaul and repair. The whole thing needs to be co-ordinated at a high administrative level responsible to the Admiralty.

In the U.K. these functions are discharged by three Flag Officers of Rear-Admiral's rank, with the titles Flag Officer (Flying Training), Flag Officer (Ground Training), and Rear-Admiral, Reserve Aircraft. Overall co-ordination is effected by a senior Flag Officer with the title Flag Officer (Air) Home, responsible in the same way as the regional Commanders-in-Chief to the Admiralty.

The various Naval Air Stations, according to their primary task, are grouped administratively under each of the three functional Flag Officers.

And now to the fountain-head, the Board of Admiralty. Naval Aviation is here represented by the Fifth Sea Lord. He has, in fact, a triple function. As a Member of the Board of Admiralty he exercises collective Board responsibility in his capacity of Fifth Sea Lord. As a Member of the Naval Staff under the First Sea Lord, he is also Deputy Chief of Naval Staff (Air). On the material side, he exercises his responsibility through the Vice-Controller (Air), who himself comes under the Third Sea Lord or Controller in the latter's capacity of responsibility for all naval material matters.

The Vice-Controller (Air) is also the Chief Naval representative at the Ministry of Supply, while at the same time he is the Chief of the Admiralty Air Material Directorates.

As a matter of fact, the relations of the Vice-Controller (Air) with the Ministry of Supply have recently been changed to give a greater degree of independence to the Navy in matters of aircraft procurement and production. I am not sure about the details of the new arrangement except to say it is calculated to strengthen the links between the Admiralty and the aircraft industry and to produce better aircraft for the Navy quicker.

CONCLUSION

To sum up, Naval Aviation is now an integral part of the Navy and an essential weapon in the armoury of sea power. Like many essentials of modern warfare, it is neither very simple nor very cheap. Finally, it should be used not in competition with shore-based air power, which would be stupidly wasteful, but in conjunction with it in those tasks for which it is best fitted.

After all, gentlemen, there is plenty of room in the sky.

DISCUSSION

MAJOR-GENERAL J. N. CHAUDHURI: I would like to know the comparative cost of an aircraft carrier, complete with equipment, in relation to other forms of shipping in the Navy.

THE LECTURER: The aircraft carrier, ton for ton, costs about half to one-third of the cost of a battleship including the latter's armament. To calculate the cost of the carrier's equipment, in which I must include its weapons in the form of its aircraft, means that I must do some mental arithmetic. Well, supposing the carrier has a hundred aircraft at an average cost of £ 50,000 each, its aircraft armament would cost about £5M. I would say this cost together with the cost of the ship itself is still less than that of a modern battleship of similar tonnage, perhaps about two-thirds. But I do not believe the comparison is very valid because there are other considerations, for example, the comparative running costs of both ships and the far greater flexibility of the carrier's weapons, which give you so much more for your money.

MAJOR-GENERAL J. N. CHAUDHURI: What about the operational costs of the one against the other under normal conditions?

THE LECTURER: In peace conditions, undoubtedly carriers are a far more expensive proposition to run, because you must keep the pilots

in flying training of different kinds. In war also, the carriers are again more expensive to run, because they tend to be kept running continuously for the purpose of dealing blows to the enemy. But a battleship for the most part is kept as a pawn in the game and therefore it is not so expensive to run. I think the days of the carrier versus battleship controversy are pretty well numbered. The Royal Navy is not building any more big battleships and I believe the same is the case with the U.S.A.

MAJOR-GENERAL J. N. CHAUDHURI: Would you say that the future of the Navy, say in the next generation, will be that it will merely consist of light vessels and aircraft carriers?

THE LECTURER: In my view there is no doubt about the carriers' importance in a future war, but there is equally no doubt that other ships of different sizes and functions will also be needed. They will be needed for protection against submarine attack as well as in the form of specialised ships, mounting powerful anti-aircraft armament; the latter will not necessarily be small ships. Moreover, some kind of insurance must be provided against the possibility of surface encounter in exceptionally bad weather when flying is impossible. Various kinds of minesweepers would also be needed. So, I would not like to say that it would be sufficient to have just carriers and light craft; a wide range of ships of various sizes would be required.

LIEUTENANT COLONEL M.L. THAPAN: In view of the greater deck surface of the angled-deck carrier, were any new problems of anti-aircraft defence posed? Also, what is the latest trend in anti-aircraft development in the light of the development of better weapons such as guided missiles?

THE LECTURER: To take your first question first. The angled deck obviously presents a small increase of deck target area but as the increment is not above the hangar or other vital space I do not think the extra target presented is really significant. As regards anti-aircraft development to compete with guided weapons, I think perhaps we are up against the security barrier, and I don't think I ought to venture my views.

COMMANDER V.A. KAMATH, I.N.: Wouldn't the answer to a guided missile be another guided missile?

THE LECTURER: I believe not, except in so far as the parent guided weapon carrier or launcher may be vulnerable to guided weapon counter action.

COMMODORE G.A. FRENCH, R.N.: The aim on the higher plane was the control of the sea communications now known as the exercise of maritime power. This was in fact based on the struggle for air mastery, in this case applied at sea. It is achieved in two ways: by shore-based aircraft for a limited distance from the shore, and outside that distance by aircraft carried in aircraft carriers. The latter are an essential and indeed basic part of a modern Navy, and would continue to be so for many years. There are visionaries who predict that they will have no place in a future war, but the facts do not support this thought.

THE LECTURER: I fully agree with Commodore French. Aircraft carriers are indeed the very foundations of a modern fleet. It is certainly also true that there are no indications that the aircraft carrier is obsolescent, nor is any such trend discernible in the warship building programmes of the major naval powers.

THE CHAIRMAN: Sometimes I think that today in India we are planning our armed forces along parallel lines in that they are all trying for the same goal but without any real interchange of ideas whatsoever. That is my first thought. The second one is that we are planning our armed forces while merely looking at local, and perhaps temporary, conditions. We are taking 1945-46 ideas and putting knobs on these as best as we can, but no real thought has been devoted to working out what India in the new context would need in another major war. Our present policy is neutrality, but just because we might be neutral, it does not mean that we should not have a defence force. In fact, this defence force should be stronger and perhaps have to be more specialised and more fitted to the particular needs of the country.

One could go on in this strain for a long time, but this is neither the time nor the place for such a discussion. I would ask you to turn the problem over in your minds however, particularly the younger generation. The Royal Navy, for whom I have the greatest respect, have always had people thinking well into the future, and the story that I was told a few years ago about the senior naval officer who thought that he could keep an aircraft in the air merely by shouting at it no longer applies.

I would like to thank Captain Smallwood very much indeed for his talk. It is one of the most interesting talks that we have had here. (*Applause*).

MORALE

MAJOR-GENERAL W.D.A. LENTAIGNE, CB, CBE, DSO

Lecture on Saturday 28th November, 1953

[With Commodore G.A. French, RN in the Chair]

THE CHAIRMAN: It is a great privilege to me to introduce General Lentaigne today—not that he needs any introduction, because you all know him well. He has been the Commandant of the Defence Services Staff College, Wellington, for some five years now, and is one of the outstanding soldiers of his generation. An Officer of the Gurkhas, he achieved great distinction as a fighting soldier in the Burma Campaign and took over command of the long range penetration group from General Wingate. He has held many staff appointments including that of Director of Military Operations at the time of partition, and thus combines in the highest degree the attributes of a leader. His subject today, "Morale", will go, I have no doubt, to the roots of this problem of leadership and we are going to listen to an officer who is a proven leader.

LECTURE

IN these days, it is fashionable to talk of Morale, but few appear to be clear as to what the word means. I have, however, been lucky in that the War Office have recently published a book on Morale in World War II and my talk to-day is based on that publication. I would like to say however that it is largely an exploratory talk designed to get all of you interested in the subject, so that you may evolve methods of maintaining good morale among those you command or serve while in staff employ.

In my talk, I may use the word "soldier". Even after five years at the Staff College I have found it impossible every time to say "soldier, rating and airman" when I mean the individuals that go to make up the ranks of the three Services. I had thought to use the American term "enlisted man", but many who serve in or with the Armed Forces are not

"enlisted". So, if I say "soldier" I mean anyone connected with the Armed Forces, be he a Sergeant Pilot or a Camel Sowar, the opposites in speed, yet both susceptible to good or bad morale.

It is only since 1946 that "Maintenance of Morale" has joined the select company of the Principles of War, and the word morale itself only entered the English language in World War I when the British and French as major partners against Germany swapped jargon much as to-day we all are learning American, and talk of "logistics", "task forces", and "communication zones".

DEFINITION

Field Marshal Montgomery when he enunciated "Maintenance of Morale" as a principle did not define what the word morale meant, and there is no definition in any Army text-book. The Navy call it the most important single factor in war, and define Morale as the general state of mind of a group of people as reflected by their behaviour under all conditions. The Air Force say it is a mental state very sensitive to material conditions.

The definition that I propose to use is the attitude of individuals to their employment. And by "employment" I mean what they are doing at a particular moment of time. For instance, no matter who you are, and how high you may be on the crest of the wave, your morale is definitely low at the moment when, sitting in the chair, your dentist approaches with a buzzing tooth-drill.

EXAMPLE

So much for definitions. I would like first to give an example of bad morale. Only some 250 miles from this room in distance, but over 2000 years ago in time, Alexander of Macedon's army after over-running half the World as known to the West, and as much terra incognita again, arrived at the River Beas. It was an unbeaten army. It was led by a Commander of the highest calibre. Its discipline was unequalled for the times. It was well fed and well equipped. Yet, when it reached The Beas, a comparatively minor and unopposed river crossing, its attitude to its employment, or, as we call it, its morale, was so bad that it mutinied. In Air Force parlance its mental state evinced the greatest possible sensitiveness to the particular conditions, while in the words of the Navy,

their behaviour in deciding to mutiny showed a generally bad state of mind. What single factor or condition, when superficially everything was going well, caused this bad morale? It was of course six years from home in time plus 2,000 miles in space and, perhaps most important, the obvious intention of Alexander to go on eastwards till he reached the end of the World. By issuing one single order—"About Turn" or the Greek equivalent thereof—the whole situation changed and the morale of that army was as good as ever. My purpose in giving this example is to drive home the fact that we can never be complacent over morale. Every one of us is virtually sitting on a volcano that may erupt at any moment either in peace or war by reason of any one of innumerable factors.

MAJOR FACTORS

With that background example let us examine some of the major factors that affect good or bad Morale. I will not deal with the more obvious ones—patriotism, a good cause, etc. Note I do not say high or low morale as it is, I think, peculiar to talk of an individual's "low" attitude to this employment.

First, I would like to stress that our old friend TIME AND SPACE is the common denominator applicable to all the factors producing good or bad morale. You will have noted that it was the dominant factor in Alexander's contretemps on the Beas River and it applies in all situations, as for example, it did in regard to the tour of duty of British troops in India in the last war which was progressively reduced from 6 years to $3\frac{1}{2}$ years as shipping and more trained man-power became available; so, bear that in mind for the rest of the lecture. Next, conditions favourable to good or bad morale vary with the service, type of unit and, most important, even the individual as also his environment. To illustrate this and its corollary that different methods must be taken to sustain Morale for each collective body or individual, I would like to compare the American and British methods of turning over personnel serving in Korea to-day. The Americans go in for what they call rotation. Each individual does nine months' front-line soldiering and then goes home. As a nation they are individualists, while their soldiers are mostly conscripts. The British on the other hand turn over a complete unit after a year's service in Korea. They believe implicitly in the team spirit and esprit de corps while their men are mostly, if not all, volunteers and regular soldiers.

Good Administration

In my view, good *administration* is the first and primary essential. In the widest sphere a low standard of living in a country leads to general discontent culminating even in rebellion. In a narrower sense a man who is hungry, or cold, or wet, or tired, or badly paid, or not paid at all, will not perform his duties efficiently. He can, and will, accept such conditions for a period, but not for long. It is for those who command him to ensure that these conditions do not occur, but if they are unavoidable, to limit their duration as much as possible and, this is an essential—tell the individual how long he will have to bear the particular discomfort. To be aware of the relevant Time and Space element enables the individual to endure.

Good Administration includes a number of components and I will touch on only a few. Adequate food, shelter and rest are, I think, fairly obvious, and I will say no more about them.

As regards pay matters, I have heard a few officers recently boasting almost bitterly that the Indian Armed Forces are the lowest paid in the world. Conversely, on all sides, I have heard favourable comment on the new pension rules. I think in regard to pay, the time and space common denominator must again be remembered, and some hope of better times should be dangled in front of officers like the proverbial carrot. As the prosperity of the country increases so, whatever Government may do in the way of taxation, the prosperity of the entrepreneur will rise. The yardstick will then be the quality and quantity of young men coming forward to join the Armed Forces.

As to Other Ranks, here it is a question of supply and demand. I have heard of no shortages of recruits, so it would seem that their pay is adequate. In fact in some parts of the country the minimum pay of Rs. 25 plus twice as much dearness allowance is far higher than the same personnel can hope to earn in civil life. But remember, there is no form of conscription in India and should this come, then pay must be the first thing to be watched, while in war, if cost of living rises in the country, again pay and allowances must be adjusted at once if morale is not to suffer.

One aspect of Administration which I would like to touch on, is Welfare—another word that joined the Military vocabulary in the stress of the last war. Much of the need for Welfare was caused through the

lamentable falling off in the standard of Man-Management shown by hurriedly trained war-time officers, as also by the need to cosset civilians in uniform who could not adjust themselves to the conditions of war-time service life as well as the professional fighting man. With the return of peace conditions, welfare effort can I consider be reduced, given good Man-Management training for officers and NCOs, but I feel that it is still often over-stressed. For the voluntary soldier I think that all that is essential is to give him conditions as good as, or a little better than, those which obtain in his home. A difficult thing to do perhaps on service, or in some of the many surviving war-time huddled camps, but not requiring much effort in permanent barracks.

Family Welfare is another matter, and one on which no effort should be spared. It is the aim of Government to improve this throughout the country and the Armed Forces should be an example in the matter, which is largely one of education both of the men and their women-folk. When on active service, it is essential that the soldier knows his family will be looked after should things go wrong. I feel, that the functioning of the District Soldiers, Sailors and Airmens Boards in the last War, although much effort was put into it, will not stand up to conditions in the next, and much more effort must be devoted to this and similar organizations. In England, perhaps, the best work in this respect was carried out by SSAFA—an organisation composed mostly of women.

It is an old British military slogan that efficient postal services are good morale raisers, but I do not think this is as important in India as it is for British or American troops. Certainly not for people like Gorkhas. I have known many of these men who have had no word from their homes for the whole three years' period between their furloughs, and they have invariably had the best possible morale in spite of this lack of home news. But in their case, as in the case of all men, leave and furlough is the last thing to monkey with, and once again the individual must always know when his leave will come round or, if leave has to be stopped, how long it is likely to be delayed.

Under Administration, I would like to touch on weapons and equipment. There will always be a state of bad morale, if equipment and weapons are inefficient either through faulty design or through their being obsolete and unable to cope with the task they have to face. Shortages of essential equipment and weapons are another deterrent to good morale,

particularly if a particular type of enemy action or of disease cannot be dealt with by the weapons and equipment issued to troops.

Leadership

So much for Administration. The next most important factor is, I think, *leadership*. Good leadership inspires confidence in the officer cadre right up from the lowest to the Supremo. Leadership is, of course, the power of command or the power to influence others. Some are born with it, others acquire it, while yet others will never be leaders. It is a vast subject, which I can only touch on briefly in the time available. The best example of leadership—the power to influence others—is the story of the Sergeant Para-Training Instructor at a School in the Middle East. A French General went up to watch a stick of trainees jump. The green and red lights came on in turn and out went all eight of the stick on the orders and encouragement of the P.T.I. He inspired so much confidence in the French General that he jumped too. Unfortunately, he had no parachute. That nameless PTI Sergeant inspired a senior experienced “pongo” to do something he would never have done unless subjected to really superb leadership.

I think for ordinary individuals, by which I mean soldiers in the ranks and not French Generals, the most important aspect of leadership is continuity. The longer a unit can keep its officers and NCOs as a team the better the leadership, even if they are only average in efficiency. A bad team will of course produce a bad unit and if they stay together long enough, the inefficiency of the unit will be noted by the Powers that Be and the bad team will be broken up. As a result of the war, there is far too much changing of officers in units to-day, and to my mind, this is a fault that must be corrected. I spent my first twelve years of service with my unit, and at the most was absent from it for a total of 36 months on leave, and Courses during that period. Only the other day I met an army officer who, in ten years' service had never served with a unit until this year. How can he have developed the power of leadership and, should they know his record, how can his men have confidence in him? I feel also that frequent changes in the officers has led to the real “hard core”—JCO's, WO's, and Petty O's—not getting the respect and trust they merit from their services and experience.

In the last war, the general verdict of the British soldier is reported to have been that “the good Regular officer is the best officer of all”.

I think the reason for this was that he was proficient in man management, not necessarily in the art of fighting. There must, therefore, be no attempt to stint or in any other way cut down the training given at the National Defence Academy.

There is one aspect of leadership that must always be remembered and that is the necessity of avoiding defeat, heavy casualties and loss of equipment, particularly in fruitless operations. It is obviously a counsel of perfection to Commanders to say to them "never lose a battle". The correct advice is, "Avoid casualties unless they produce a concrete gain. None of this World War I leadership, where the loss of a worthless area of shell holes and mud was looked upon as a slight on the Commander, who promptly ordered hurried attacks to regain the lost ground and, in the process, killed thousands of his men". For more junior Commanders I think the best advice is to ensure victory in your first engagement of the war. Use a sledge hammer to crack a nut and ensure victory so as to start your green troops off with a success. The biggest compliment ever paid to the morale of the British nation and Armed Forces was that paid by a Frenchman who said, "The British lose all the battles except the last one". In short their morale survived continuous defeat.

Training

The next factor is, I think, *training*. The individual must be so well trained in the use of his weapons or equipment or his job that he has supreme confidence and feels that he is better than his opposite number in the enemy's camp. It is obvious that his weapons and equipment must be first-class and of course that his job must be a useful one, or at least appear to be useful to the man himself. There will be bad morale if you always pit the frigates of the Indian Navy in war against a modern force of light Cruisers. Equally, an Anti-tank Gun crew set to guard a 14,000 ft. high pass over the Himalayas will soon begin to wonder why they are there, and will develop bad morale. You will remember the extra man found suddenly in the crews of German bombers shot down in the last war. On interrogation, it was found that his job was to shout "*Achtung Spitfire*" when one of our Spits appeared. An example of lack of confidence in their weapon and, of course, the better solution would have been to have given the bombers increased fighter cover rather than an extra man in each crew.

I think the biggest mistake in training is monotony. This induces boredom which is a root cause of bad morale. However, monotony—doing the same thing day after day—appeals to some of low intellect and education. They don't have to think and look upon their employment as a soft job. This is, I am convinced, most dangerous because when war breaks out soft jobs have a habit of disappearing and the incumbent suddenly finds himself thrown into new surroundings, cannot adapt himself to them, and quickly develops bad morale. Should any of you have adopted a liking for year after year of employment at Defence Headquarters, may I suggest that you get earmarked now for a key job in civilian clothes here in Delhi on mobilization, or quickly snap out of it and get out of the rut.

You may argue that if a young officer spends his first ten to twelve years of service with his unit, as I earlier advocated, he gets into a rut and is a victim of monotony. I don't think it applies, if his employment as a regimental soldier is broken up by Courses, different appointments in the unit, change of location and role of the unit, and of course, leave, while obviously he must be encouraged to develop hobbies and pastimes to vary his routine. It has been said by someone that war is months of boredom doing nothing, with intervals of seconds of intense fear. This adds force to the need to avoid monotony whenever possible. War-time monotony is often caused by waiting for D day and H hour, or standing by for an operation that never comes off. Perhaps the worst of all is to subject troops to long and severe preparations for an operation and then at the last moment cancel it.

Discipline and Ceremonial

I will now touch on *discipline* allied to *ceremonial*. It does not follow that good discipline, which is strict but just rule, means good morale. Discipline applies all the time to the soldier. It is the chief feature that differentiates him from the civilian, and the aim of discipline is to fit him for his employment. Jails, Detention Barracks and Hospitals have very strict and just discipline, but few will argue that the morale of the inmates is good. Again, a unit that is superb on ceremonial parade may have very bad morale, particularly, if by virtue of a continual round of monotonous parade ground drill, field and weapon training and administration are neglected and the men have no confidence in themselves in war. What ceremonial parades do instil is esprit de corps,

the feeling of belonging to a fine unit, of being one of a body of good fellows, all imbued with the same idea. But esprit de corps can also be developed by distinguishing dress, competitions both at work and at games, study of the unit's history and traditions, and so on.

Punishment

Following after *discipline* is *punishment*. This must fit the crime, be of the correct degree of severity, but, most important, not too long delayed. Many years ago there was a brutal murder in a unit I was serving alongside. All ranks condemned the crime and would, I believe, have killed the murderer if they had caught him at the time. He was found and arrested three months later and placed in the unit's Quarter Guard. It took a further nine months to bring him to trial and convict him. By then the feelings of the men had completely changed. Their sympathy was with the murderer and the unit's morale was at the worst on the day of his sentence.

Again, at the end of the war, I took over a Division and found about fifty outstanding Courts-Martial, some as long as 18 months from the date of commission of the offence. In every case I was told the evidence on the face of it was cast iron, but a peace-time lawyer serving as J.A.G. advised no trial until some other impossible piece of evidence was available. I ordered all to be tried and put out of their agony. In every case the accused pleaded guilty.

I mentioned distinguishing dress as an aid to esprit de corps. As you know, this largely applies to the army where each Corps or Arm has its own badge, shoulder titles, coloured beret and so on. But dress is one of the vanities of mankind, and, when allowed, the Navy and the Air Force both demonstrate this human weakness. In the last war, the Fighter boys left the top button of their tunics undone, while Bomber crew hung a whistle on the same button, and in the Navy the tough guys in destroyers and the like grew beards. Should this unofficial unit—not individual—idiosyncrasy in dress develop in war, provided it does not affect efficiency, I suggest the Provost Marshal looks upon it kindly. How many Armoured Corps officers had their leave ruined in Cairo for wearing corduroys and swede shoes !

Another form of distinguishing dress long recognised as good for individual as opposed to collective morale is good conduct or proficiency

stripes and, of course, medals and decorations. Chester Wilmot in his book "The Struggle for Europe" tells how Churchill on his visit to the front found the Americans issuing the medal of the Purple Heart to all who were wounded, and, as a result, re-instituted wound stripes which were first used in World War I and then dropped in the peace. I believe in Korea all UN troops were given a campaign medal of sorts, except the Indian Field Ambulance. Here, I am possibly touching on high politics, and I apologise, but I feel that the issue of even a Red Cross Medal to be awarded for good work in peace or war to both soldiers and civilians might have been of advantage to morale.

One word of warning, however, and that is that Staff Officers and the like from Rear areas, or non-flying jobs, should never visit front-line units dressed up in all the regalia of a ceremonial parade. They become a mockery to the troops and confidence in the Higher Command is jeopardised. They must be clean and neat, but not over-dressed.

Loyalty

A last factor is that of *loyalty*. If men begin to criticise their commanders, particularly the High Command, it becomes a habit. State a lie often enough and it becomes a fact, and such criticism based on idle rumour and lack of knowledge soon comes to be believed. It evinces bad leadership if NCOs and officers in ascending rank allow such criticism to go unchallenged when they hear it, and it is far worse if they voice their criticism in front of their juniors.

Fanaticism Based on Fear

Now I would like for a moment to touch on the morale of such people as the Japanese in the last war, the Communist forces of to-day, and such enigmas as the Janissaries of the Turkish Empire in its heyday, the "Ghazi" of the days of the Moguls and the other Muslim invaders of India, and even the early Christian martyrs in the days of Pagan Rome. What gave all these people their apparent superb morale? I don't know if I am correct, but I consider it to be religious fanaticism, and I am assuming that you can call Communism a religion. This religious fanaticism is based on fear. Fear of disobeying the religious leaders, since such disobedience means a far worse death, not only for the individual, but also for his family, than being killed in action. Alternatively, it is fear of what will happen to the individual after death, which is so strongly imbued by the religious leaders as to overcome the fear of death itself.

It was very noticeable with the Japanese in the War, and with many Communist prisoners in Korea today, that once they were captured and so broke away from the thralldom of their religious leaders, they renounced their religion, their homes, and all that they fought for so staunchly. Such indoctrination by fear is foreign to modern civilization, and to democracy, but it has to be contended with, and I feel it should be studied with a view to preventing bad morale in our troops when faced with fanatical "kami-kaze" and other suicide attacks by overwhelming hordes of enemy.

This leads me to one final observation, which is that, so often in war we have suffered a series of defeats and destruction of morale at the outset through under-estimation and lack of knowledge of our enemy as also our allies. I am convinced that things would not have gone so badly in France and Norway in 1940, or in Burma and Malaya in 1941-42, if we had studied German Blitzkrieg methods and Jap infiltration tactics. How many of the officers and men of the Armed Forces of India today know even the badges of rank of possible allies or enemies, much less their organisation, equipment and tactics? This of course is another Training factor as affecting Morale.

CONCLUSION

In conclusion, I would like to stress that it is impossible for anyone to produce a universal hand-book on morale for peace training use. In every situation the factors are different and the effect on each individual and each collection of individuals will also vary. The best we can do is to develop leadership and man-management in our officers and NCOs, ensure that administration is as good as possible, insist on realism and variation in training and employment, and so build up the confidence, contentment and pride in himself that marks the good soldier. Remember, too, that as in all military problems, Time and Space is often the most important factor in maintaining good morale.

With this somewhat sketchy background I would suggest that each of the three Services produces its own "Handbook on Morale"—it is a subject to which integration or standardization should be anathema—and from this handbook every officer and NCO should develop his understanding of the subject. With apologies to experts, I do not think that it is a subject that can be left to Doctors, Psychologists, Psychiatrists and Psycho-Analysts. They can help a great deal but the spade-work must be done by

those in daily contact with the men in peace, and with experience of them in action.

To end, I would like to give an illustration of good morale, *i.e.*, a good attitude to employment, by quoting W.B. Yeats' "An Irish Airman Foresees His Death"—a morbid subject possibly, and one you may claim shows bad morale, but remember it was a poet not an airman who wrote it.

"Nor law, nor duty bade me fight
Nor public men nor cheering crowds
A lonely impulse or delight
Drove to this tumult in the clouds.
I balanced all—brought all to mind
The years to come seemed waste of breath
A waste of breath the years behind
In balance with this life—this death."

DISCUSSION

CAPTAIN A. CHAKRAVERTI, I.N.: The lecturer mentioned that to build up morale, we should have man management and leadership, and that one of the important factors conducive to this was continuity. In war time it is difficult to maintain continuity and even in peace time it is likely to be no less so. What do you suggest as a remedy?

THE LECTURER: I am not familiar with the manning system of the Indian Navy. Pre-war in the British Navy continuity was assured by a ship being commissioned for two years and there being no change in the complement during that period except to replace casualties. For two years therefore one crew from the captain right down to the lowest rating worked together. Nowadays owing to various conditions, particularly National Service, a ship in commission has its crew turned over by the periodic rotation of individuals, something like the American system in Korea that I referred to. Many Naval officers have told me that efficiency has suffered as a result. In war continuity must suffer and this can only be countered by building up increased esprit de corps—greater pride in the ship and its achievements. I do not know the effect of all this in a small navy like that of India—you obviously cannot keep people as long as you like in one job owing to the few types of ships, limited stations and the need for training for expansion. It is a problem for the personnel branch to solve.

MAJOR-GENERAL J.N. CHAUDHURI: I would like to put two questions. The first is that the Indian Army has changed its recruitment very considerably. Is that basically a good thing and will it have any effect on the methods by which you retain morale? For instance, we are not getting them so much from the villages. It is urbanised now and the educational standards are higher.

The second question is, what is the value of personal leadership, personal example by the Commander?

THE LECTURER: Dealing with the first question, very obviously with higher standards of education you will require far better man management and leadership. I think that is illustrated by the fact that the discontent culminating even in mutiny at the end of the war was most evident in the more technical services and corps whereas those who were recruited almost entirely from the villages—the infantry for example—had little trouble of this kind. I feel that with urban enlistment you have got to pay very much more attention to morale, and man management is going to be more difficult. Before the war the Indian soldier accepted almost everything and took every hardship for granted. He often came into the regiment as the third or fourth generation and from youth it was instilled in him that the Regiment was the 'Raj'.

Now your second question was about personal example. I think it matters enormously. Personal example has a far greater value than many people realize. For example I know of one battalion which was overrun in the Desert. They were in hastily prepared trenches with no mines. They were attacked by German armour and the C.O. for eight hours walked round encouraging the men and replacing casualties in the gun crews with infantry. That battalion would not have held out so long if he had not done this. There were two other battalions whose C.Os. were not so active and they did not stand for more than a few hours. There are innumerable other examples. Personal example undoubtedly does help.

LIEUT. COLONEL A.N.S. MURTHI: You said that fanaticism based on fear is definitely wrong. Do you think that some regular raising of the spiritual conscience in the soldier will assist in raising morale?

THE LECTURER: I think the soldier must know the cause for which he is fighting. In the early part of the last war the British soldier was

rather woolly in this respect and possibly, too, the educated Indian. For that reason morale did suffer, but later on when the British soldier realized that he was fighting for the survival of his Nation he got down to it. You must decide on a good cause and get it across to the troops. In the case of the fanatical troops of Japan their cause was the Emperor. If they were foolish enough to allow themselves to be taken prisoner they believed that they would never survive when they returned to Japan. Consequently we seldom got a live Japanese because they would commit suicide rather than be captured. When we did get a prisoner he was either badly wounded or unconscious. When he came to, his first thought was to commit suicide. When prevented he felt in his conscious mind, "I have been captured through events over which I had no control. I am written off as regards my native country Japan." Consequently he often as not, offered to join our army and a very good soldier he would have made too fighting against his own people.

LIEUTENANT (E) A. RATTAN, I.N.: In connection with the pay conditions, you said that the forces of India are getting sufficient pay now and that recruitment has not dried up, but do you think that we are getting the right type of material?

THE LECTURER: It is for you, the officers, to say if you are getting the right type or not. I think I said that the pay in the ranks is adequate. It is for you to say if you are getting the right type. If not, then you will have to increase the pay. I imagine that you are referring to the technical branches and may be in the technical branches we are not getting the right type. I am talking more of the ordinary soldier or rating than of the technician.

LIEUTENANT M.M. JOHRI, I.N.: It is a difficult question, Sir, and I should not be misunderstood. The problem is that in the changed conditions in India, a lot of officers have received quick promotion. The men in the ranks and junior officers are apt to think that their leaders in the top ranks lack the necessary experience.

THE LECTURER: I think that exists in the Services in some form all the time. It is not peculiar to India. I think everywhere people think that some if not all their leaders are not up to the job. All I can say is that you must discourage it and must ensure that those in the top ranks know their stuff and are properly trained. In the army efforts are being made. We had a study fortnight for Brigadiers this year, Next year it may be for a longer period,

CAPTAIN A. CHAKRAVERTI, I.N.: You said that a little recognition—that is what I understood from wound stripes and the medal of the Purple Heart—is necessary in war. Would you say that similar recognition is necessary to keep up morale in peace time for any type of work in which the Armed Forces are employed?

THE LECTURER: Such recognition in peace is already practised. Good Conduct stripes, Proficiency pay and so on are already there. It must always be granted in some form. India has instituted awards for gallantry in action. I think in due course there will be some system of honours for those who have deserved well of the country in peace as well as in war and these will be granted to men in any sphere or walk of life.

MAJOR-GENERAL H. WILLIAMS: Your lecture has dealt largely with the soldier, sailor and airman. In fact many of them in the process of war have got to control civilians in factories and workshops and a hundred and one different things. Do you consider that the precepts given for morale are the same for them as for people who are enlisted, or would you suggest something different?

THE LECTURER: I think the precepts are the same basically but there will be variations in detail. The civilian working in a factory for instance will on occasion be most apprehensive of that factory being a bombing target. That will probably be a bigger influence on lowering his morale than it would be to the normal soldier in battle. Equally, a civilian working long hours of overtime in war conditions will develop bad morale, but if you pay him adequately or convince him of the cause he is working for, his morale will not drop. You do require some form of Works Morale officer who will be in touch with the civilian workers and will translate to you, the soldier in charge, the attitude of the workers to their employment.

THE CHAIRMAN: I am very reluctant to close the discussion, but it is now getting late. I know you will all join me once again in thanking General Lentaigne for one of the most stimulating lectures we have heard in this hall. (*Applause*).

LIGHTER AFRICA

STORIES FROM THE ERITREAN-ABYSSINIAN CAMPAIGN 1940-41

LIEUT-GENERAL SIR DUDLEY RUSSEL, KBE, CB, DSO, MC

Lecture on Thursday 3rd December, 1953

[With Major-General J.N. Chaudhuri, OBE, in the Chair]

THE CHAIRMAN: Gentlemen, as I was walking down the corridor with the lecturer I said to him, "Sir, I have known you for nearly a quarter of a century. I have to introduce you for the lecture you are giving. How do I do it"? General Russell thought for a minute and then said "Just say 'it's the Pasha'". Gentlemen I introduce him as advised—"Here is the Pasha" (*Laughter*).

LECTURE

I FELT greatly honoured when the Secretary asked me to lecture, and much relieved when he said that I might talk on anything I liked. I glanced through a list of previous lectures and called to mind some that I had attended. I came to the conclusion that the subjects were pretty weighty ones, which did not seem to suit my style. I therefore decided that I would attempt something in a somewhat lighter vein. That is the thought reflected in the title of this talk:—"Lighter Africa".

Thus, though I hope that you will obtain an overall picture of what happened, which will be of value to you, I shall try and steer clear of technicalities and dwell more on amusing, instructive, and interesting stories.

PRELIMINARIES

In 1940 I was commanding my Bn. the 6th Royal Bn. Frontier Force Rifles in Secunderabad, where we were part of the 5th Division. We had just been issued with mechanical transport and in August were ordered overseas. On arrival in Bombay we found that, by an extraordinary

coincidence, not only were we due to sail on the same day that the Bn. had embarked before on one occasion but also in the same ship as we had set sail in on another. The Pandits also said that the day was propitious. The effect of such things on Indian soldiers is greater than is generally realised and all felt that we were away to a good start and were in for a successful war. This proved to be true.

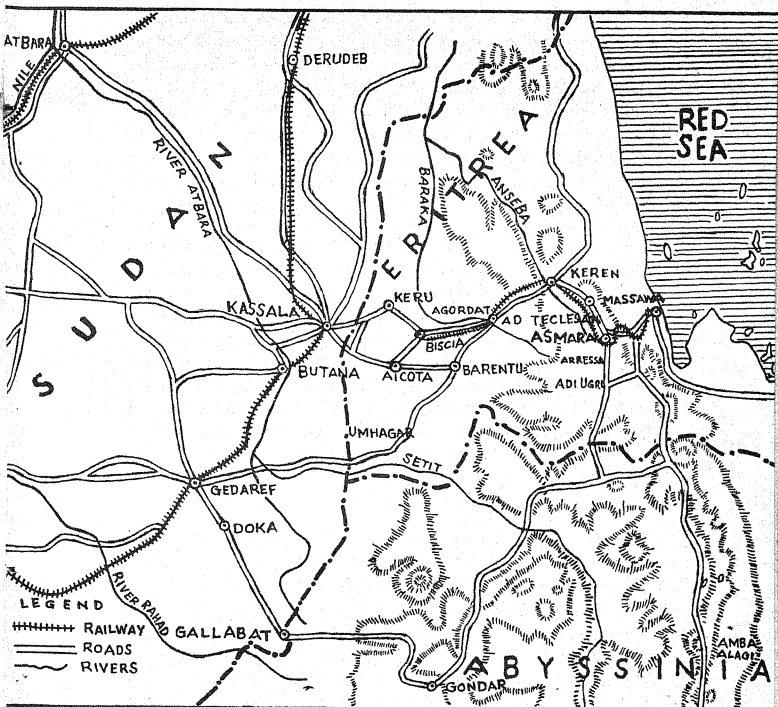
We were not told our destination until after we embarked, when it was given out as Port Sudan in the Red Sea. The voyage, in a convoy of many ships was uneventful until we arrived off the Port of Massawa, when we were attacked by Italian aircraft. Bombs were dropped both across the convoy and from front to rear. We were lucky as there were several near misses but no serious damage. On our own ship, much to the disgust of the Captain, some of our enthusiastic Light Anti-Aircraft Machine Gunners shot away some of the stays and damaged the masts.

We arrived safely at Port Sudan, went ashore and were told to entrain for Derudeb. I enquired about our transport and was asked what ship it was in. On hearing my reply the Staff Officer concerned said :— “ Good God ! That ship has gone to Suez.” I said :— “ It’s no use my going off to Derudeb and possibly into action with no transport.” He replied :— “ Oh ! Hire locally. Hire locally.” I asked if he was sure that there was any local transport. He said he was sure there was and gave me written authority to hire for a fortnight until our transport was likely to turn up. So off we went.

On arrival at Derudeb, I found that there was only one antiquated lorry available and an ancient Ford, I think, belonging to the Political Officer. There were however many camels, so we hired them and, as we had not been mechanized long, there was not much difficulty. In fact, going on parade and visiting troops on a camel was rather fun when one got used to it.

Derudeb is in the country of the Hadenda tribe, somewhat primitive people with fuzzy hair. We soon got to know and like them and, as we were hiring their camels, we had a close link with them. We were anxious that our sentries would not shoot them, especially if they came near our camp at night. I therefore asked the Political Officer to let me know how to say :— “ Halt ! Who goes there ?” in the Hadenda tongue. It was something like “ Gadda baruk awah,” which our sepoys learnt and as “ Gadda ” in Hindustani means “ a donkey ”, there was considerable laughter over the challenge.

SUDAN ABYSSINIA ERITREA



The Italians had invaded the Sudan and seized Kassala and were holding positions north of it. The Sudan Defence Force were in contact and we began to carry out reconnaissances. The country is nearly all desert and we were anxiously waiting for our vehicles. There were many gazelle in the desert and we used them for training in stalking and sniping, to the great benefit of our tummies in more senses than one. I was out one afternoon trying to shoot a gazelle for the Mess when I came across one of the Hadenda desert water-holes. It was a very poor affair with mud walls and mud drinking troughs which were in disrepair. We were at that time training our Pioneer Platoons and, amongst other things, were teaching them brick-laying. We sent a party to the water-hole, repaired the wall and made good troughs. The Hadendas were delighted, showed us more of their water-holes and offered to reconnoitre the Italian positions for us.

Our transport then turned up and we paid off our camel-boys. I was returning to camp one evening with our doctor, when we saw what we thought was an elderly Hadenda with white hair coming towards us. On closer inspection he turned out to be the doctor's camel-boy who had come to say goodbye. He had got his pay and was throwing a party and it was customary on such occasions to cover the head with a kind of white butter. If this was not done it was an insult, the equivalent of not dressing for dinner. The Political Officer told me that on one occasion when a chief had attended a party without enough butter on his head as a studied insult, the host had lopped the guest's head off. The Political Officer, who had only recently arrived in the country, arrested the host for murder but, on appeal, he was let off as his act was considered justified.

With the arrival of our transport we were able to take a slightly more active part in the war north of Kassala, but at this time I left command of my Bn. and relieved Colonel Frank Messervy as G.S.O.I. of the 5th Indian Division at Gedaref. The Division now consisted of three brigades, 9, 10, and 29, each with one British Bn. from the Brigade which had originally been in the Sudan. The usual number of divisional troops gradually became available and there were valuable units of the Sudan Defence Force under command. The Italians were in much greater numbers and had invaded the Sudan at Gallabat and Kassala. We now began to plan to push them out of the Sudan as the first move towards pushing them out of Africa.

I had a quick hand-over from Colonel Messervy which went something like this :— " You should read these three files. These are character

sketches of the more important personalities. The Old Man is simply grand. I'm off to pack. Ask me anything you want to before I go this afternoon." All one really wanted. He then went off to command Gazelle Force which was to keep the enemy fully occupied at Kassala.

Life was pleasant in Gedaref and plans went ahead to square up with the problems of pushing the Italians out of the Sudan with a view to an advance into Eritrea and Abyssinia. Linked with this was the introduction of Haile Selassie into Abyssinia and arranging for a sympathetic rising in his favour.

One amusing incident occurred when I was returning to my quarters from the office. I met the Mess Sergeant trying to talk to a beautiful Sudanese maiden, bare from the waist up, obviously very angry, and gesticulating furiously. She was extremely comely, if you like that type of beauty. The Sergeant said that he wanted an interpreter. I replied that I thought he wanted a chaperon. I sent for an interpreter, however, and remained to see the fun. The girl was from the local village and sold eggs, milk, and vegetables to the Mess. She said that she had a complaint, that if the soldiers did not stop trying to make love to her she would really have to put up the price of eggs.

GALLABAT

Plans were now made for the capture of the Fort of Gallabat. During the preliminary reconnaissance we found that the Italians had obtained some anti-personnel air bombs and were burying them upside-down in the jungle and covering them over with leaves so that they would act as anti-personnel mines. The 3rd 18th Royal Garhwal Rifles first ran into them. They carefully took out one and found that it had a small brass stud on top which set it off. On examination they found that the striker came out or the mine was rendered safe if the prongs of a table fork, suitably bent, were inserted under it. The leaf covering made finding them a little difficult but the Garhwalis solved this too with suitable brooms. When I went to see them they were all laughing at the problem and said:— "Ham sab sweeper ban gaiye, Sahib". ("We have become sweepers.") And there they were, happily sweeping the leaves aside and flicking out the strikers of the mines with their forks.

The operations at Gallabat offer an example of how the men in the field are sometimes affected by the publicity which you like in your early morning paper and that subtle factor, prestige. In November 1940

10 Brigade captured Gallabat Fort. This was one of our first successes in this area and the battle was written up with headlines in the World Press. During this battle most of our few aircraft had been shot down and the Italians had complete control of the air over Gallabat. The Fort is situated on a stony exposed hill and we began to suffer heavy casualties in it from bombing. Brigadier Slim, later C.I.G.S., who was commanding the brigade there, asked permission to withdraw from the Fort as it had little military value and we were losing men. The Divisional Commander, General Heath, was sympathetic and represented the matter to the G.O.C-in-C, Sudan, who—after referring the matter higher, I think—ruled that under no circumstances would the Fort be evacuated as this would have a bad effect on British prestige, owing to the great publicity given to its capture. Brigadier Slim did not like this ruling, so the Divisional Commander went to see him. After a lot of discussion it was arranged to leave a small party in the Fort, largely underground, and to remove the remainder of the Fort garrison. But plans were made to dominate the surrounding jungle and to patrol the Fort at night so that the Italians could not recapture it.

Throughout December probing and planning went on and in the area towards Um Haggat the sportsman could find other than two-legged game: lion, baboon, hippopotamus. Other Ranks had to be restrained from shooting hippos with anti-tank rifles. On one occasion, one of our patrols out at night near Gallabat saw what looked like an Italian patrol passing them in the jungle. They thought that they would try and cut them off from their base and got behind them and followed them up. After some time they surrounded the enemy in some thick bush and started to close in on them with the bayonet; only to find to their consternation that they were baboons.

ADVANCE TO BARENTU

The 4th Indian Division were due to arrive from the Western Desert in January 1941 and a plan was made to pinch out Kassala on their arrival. Either the enemy expected this or our probing in that area was too vigorous; whatever the cause, the enemy showed signs of trying to slip away from Kassala. This he did on the 17th of January, when he was quickly followed up by the 4th Indian Division on the north road and the 5th on the south. Both divisions were considerably delayed by mines and demolitions. On one occasion the forward troops, by finding a short cut, got ahead of the Sappers clearing the mines on the road and came to a bridge which they were pretty sure was mined. Some camels which were grazing nearby

becoming frightened at battle noises stampeded across the bridge. There was a bloody mess but most of the mines were set off and, after careful reconnaissance, the troops drove over.

The 4th Division met strong opposition at Keru but the 5th Division, which by the 22nd of January had part of the 29th Brigade east of Aicota, was able to send a mobile force, found from 10 Brigade, northwards along the Biscia road to interfere with the Italians holding up the 4th Division. After brushing aside light opposition, 10 Brigade were in a position to intercept movement on all roads leading east from Keru. During the night 22/23 January, the enemy hurriedly abandoned their naturally strong position at Keru and in the morning withdrew into the arms of 10 Brigade. Formed bodies were killed or captured, others attempted to break through the cordon, many to come into our hands later as a result of thirst or hunger. One courageous unit of the Italian horsed cavalry charged those who were blocking the way. This must have been one of the last attempts to use horsed cavalry massed against modern weapons ; it was certainly the last time many of these gallant men ever tried it. The sight to horse-lovers was appalling.

The 5th Indian Division continued its advance on Barentu from both the north and west and, after overcoming many demolitions and mines, captured the place by the end of the month. Amongst other things captured was a gold mine and, though many of us tried to pick up something, the Civil Authorities were commendably quick in taking it over.

The attack from the north on to Barentu prevented the enemy there from joining their comrades in Keren. They made a hurried withdrawal east towards Arressa, but as there were no roads through the mountains, they lost all their transport and had to take to the hills on foot. Many were killed or captured.

A deception in the direction of Arressa was kept up which included the necessary paraphernalia, for constructing a road through the hills, though this was actually never intended, and many enemy were contained to thwart this to our subsequent advantage at Keren.

KEREN

At Keren the 4th Indian Division had been hammering away at the heights unsuccessfully and it was obvious that they were not strong enough, so the 5th Indian Division was called in to help. The Commander

of the 5th Division carried out a reconnaissance from the forward defended localities of the 4th Division and attempted to analyse the reasons for the 4th Division's failure. He came to the conclusion that it was largely because the slopes of the hills were too steep to allow of intimate artillery support. The Italians were therefore able to re-man their defences after the artillery lifted and before they could be captured by our infantry. Or, if captured, artillery fire could not be put down on a counter-attack as any shells missing the crests went right down into the valley beyond. General Heath also realised the value of concentrated artillery fire and wished to be supported by the guns of both divisions, which would not have been possible if a suggested plan to turn the position to the east by way of Aqua Col had been agreed to. It was later discovered that the Italians expected us to force Aqua Col and reacted to our deception in that direction.

With these ideas of the slope of the ground and concentration of artillery fire in mind, General Heath decided that he would ask the C-in-C to agree that the 5th Division should attack Fort Dologorodoc, which appeared to be the strongest place, in the middle of the position above the main road, overlooked by hills on both sides, and the key to the main gateway; but where the reverse slopes were not so acute and the Fort, if captured, could probably be held against counter-attacks which would offer opportunities of inflicting serious losses on the enemy.

This plan did not come in a flash to General Heath; he had not come to a decision before he went to bed after his reconnaissance and he had been having lengthy discussions about the problem with his senior General Staff Officer. One does not sleep well during this uncertain planning period. In the early hours of the morning the G.S.O. I got up to go to the Kitchener Tent; his route was past the General's tent. The General, lying awake thinking, shouted:—"Who's that?" and on hearing that it was the G. I. called him into his tent and said:—"I think I've got it." The plan was then made and produced in writing with the G. I. sitting on the General's bed.

After a considerable amount of discussion this plan was agreed to. The Fort was captured and the flower of the Italian Army was killed in attempts to recapture the Fort over reverse slopes which were not too acute for artillery fire to be brought down on them. That is how the battle of Keren was won, and the destruction of the enemy's best troops, which one is always after, had far-reaching results.

This break-through took rather longer than, I think, the C-in-C had hoped. The first attack went in on the 15th of March and he had in mind sending a suitable signal referring to the famous:—"Beware the Ides of March", but it required a ten-days, dog fight before we achieved a decisive victory and then "The Ides" were past.

I visited Keren this summer and noticed how difficult the country behind the gateway was. If the Italians had withdrawn in good order, instead of expending their strength on useless counter-attacks, I think they would have delayed us much longer.

General Wavell visited the Divis on during this battle and, as you probably know, he was famous for his silence. General Heath always liked to see his battle and we were usually able to arrange for a suitable O.P. for him. General Wavell was taken to this good view point accompanied by the C-in-C Sudan, General Heath, the C.R.A. and G.I. The C-in-C first explained the situation to Wavell who said nothing; General Heath then had a go, still silence; the C.R.A. and G.I. then followed up and said their pieces. There was still no obvious reaction and then, to everyone's relief, General Wavell turned away and said:—"It seems all right." He then went back to his H.Q., after we had with difficulty persuaded him not to visit some hot spots, and wrote a wonderful message to the troops.

ASMARA AND MASSAWA

After the battle of Keren we had a clear run for about thirty-eight kilometres, in which we picked up most of the Italian infantry, only the few who managed to obtain a lift in vehicles being able to escape. After a sharp brush at Ad Teclasan, delegates arrived from Asmara to surrender the town on the 1st of April. As we were used to driving on the left of the road it was necessary to enforce this rule quickly in the city. This was done by sending some tanks through the main streets with large placards on them in Italian and English: "Keep to the left." This quickly had the desired result with, surprising to say, no accidents; though some of the faces of the drivers of the Italian vehicles registered considerable consternation when they came round the corner to be confronted with a tank on the wrong side of the road carrying these placards.

Divisional H.Q. moved into the Italian War Office at Asmara and seldom can a Divisional H.Q. have been housed better. We began to go through all the papers, particularly with a view to obtaining information

about Massawa as we were anxious to capture the port as soon as possible. We were lucky as we found detailed plans of the Massawa defences. While we were doing this we discovered that the Power House which supplied electricity to Asmara was at Massawa and had its own telephone line. The Italians in Massawa were reluctant to incur the ill will of the people of Asmara and so continued to supply the electricity. Rather amusing being lighted by the enemy. Admiral Bonnetti was commanding in Massawa and we spoke to him and his Staff on the Power House telephone. We wanted to get the Port of Massawa intact and used all the persuasion we could. The children in Asmara were short of milk and I remember one of our arguments with the Admiral was that if he would not damage the port we would bring in milk and baby-foods for the Italian bambinos. He said he would have to refer the matter to Rome and from there sterner counsels prevailed and he received orders to do the maximum damage to the Port, which he did.

A force was sent from Asmara which combined with some Free French troops who had been coming down on Keren from the north and in addition a brigade from 4th Indian Division attacked Massawa itself from the north. The Port was soon in our hands, as was to be expected, we being in possession of plans of the defences. The Port had, however, been systematically destroyed and though work began on it at once and a trickle of ships soon began to come in, it was a very long time before it was working to a really satisfactory capacity. The story went round that Admiral Bonnetti, in the approved style, tried to break his sword across his knee before surrender, but found it too much for him, and threw it in the water; from where it was later recovered by a souvenir hunter.

We now heard that General Heath was to leave us to command a Corps in Malaya and that he was to be relieved by General Mayne. This was a popular appointment as General Mayne had commanded one of the Brigades in the 5th Indian Division.

On returning to Asmara we started to plan for an advance south into Abyssinia. A mobile force had already been sent probing in that direction and we now set about making arrangements to follow it up in strength.

One evening I was working late in the office when an orderly came in and said that an Abyssinian gentleman with an interpreter wanted to see me. I asked them to come in and found that the interpreter only spoke French, Italian and Amharic. The Abyssinian gentleman accompany-

ing him was a very impressive personality and had charming manners; so I asked him to sit down and gave him a cigarette and a cup of tea. We then tried to understand one another, which was rather difficult, as I was not strong in any of the three languages spoken by my guests. I managed to discover the name of my distinguished guest, which was Ras Seyum. This meant nothing to me at all, so we whiled away the time with light simple conversation while I put through a call to the Political Officer. When he heard the news he shouted over the phone in quite an excited voice: "Hold him. Hold him. I'll be right over just as soon as I can. Be careful. Make a fuss of him." I then managed to ask who Ras Seyum was. The Political Officer replied: "Good God! Don't you know? He is the next biggest man in Abyssinia after Haile Selassie. Keep him happy. Keep him happy". The Political officer soon arrived and took Ras Seyum away with him with suitable honours. I met the Ras later when we were fighting at Amba Alagi, when he frequently referred to our little tea party and how well he had been received. He rendered us great assistance. I met his grandson in Addis Ababa this year, where after going to Cambridge he has become an official at the Foreign Office. He told me all about his grandfather's activities with the 5th Indian Division and the tale had not lost in the telling.

AMBA ALAGI

Our mobile force, formed round Skinner's Horse, had been having a wonderful time on their speedy advance southwards. They had captured many prisoners and much material and all the local inhabitants were glad to see them. I asked some of these local tribesmen why they welcomed us so heartily. The usual reply was that the British had been there once before and had not remained, and they were quite sure that they would not remain again, that is why we were so popular. In one prisoners-of-war camp the Italian guard had handed over arms to the prisoners so that they could protect themselves from the local tribesmen and had gone to Amba Alagi to fight us. In this camp there was one British prisoner who had been awarded a posthumous V.C. in the Somaliland fighting. I believe a memorial had been put up to him in his village church at home.

Towards the end of April we had driven the Duke of Aosta into his final stronghold in Abyssinia at Amba Alagi. The 5th Indian Division were attacking him from the north and a South African Brigade were on their way to join in the fight from the south.

Amba Alagi Mountain itself is a little over 11,000 ft. with precipitous sides. Spurs lead up to it from the east and west, that to the west being about 10,000 ft. and that to the east a little higher. The main road as far as we had been able to get along it was about 7,000 ft. and had been blown in several places. A road led to the Falaga Pass to the east but was very third-rate and went no further except as a track impassable to wheels. It had also been blown. The country away from the roads and tracks was precipitous and enormous, some of the cliffs being 1000 ft. and more sheer drops. The Italians held the general line of the crests of the hills with a certain amount of depth forward and the whole defensive system was based around Amba Alagi Mountain, where they were well quarried in around the crest and included in the defended locality Tosselli Fort which had been built some years before.

The attacking plan was to threaten the enemy at the Falaga Pass, a threat to which he was very sensitive as he had attacked the position from that direction successfully in his war against the Abyssinians, and to carry out a surprise attack from the west after concentrating and concealing a brigade group there. A deception was kept up along the main road in order to contain as many of the enemy as possible in that area.

The feint attacks went in on the night of the 3/4 May and the real attack at 0415 hrs. on the 4th of May. Great progress was made but the attack was held at Amba Alagi itself. A dog-fight ensued, a right hook was put in, further progress was made across country from the Falaga Pass, the South Africans began to arrive from the south, and by the 15th of May the Duke of Aosta and his forces were hemmed in on the Amba Alagi feature. Further resistance meant useless loss of life and he asked for an armistice.

It was arranged that I as G. I. of the 5th Indian Division should meet a General Volpini on the main road about half way between the forward defended localities of the opposing forces. I went there but the Italian General did not turn up. Later it was discovered that he had been murdered a short distance from our rendezvous by Abyssinian patriots who were all over the place. The Duke then sent a message to say that as it seemed too dangerous for the Italians to come outside their defences, would the British representative come right through to the Italian lines. The next day I climbed into the Italian Fortress at Amba Alagi with a small escort.

On reaching the Italian forward trenches the defenders seemed very pleased to see me and insisted on my drinking a glass of neat brandy after my strenuous climb. This I did after protest as I thought it might help the atmosphere. I then went on to meet General Trezzani with whom I was to negotiate. He insisted on my drinking a glass of neat whisky before we started talking, which I did as I thought the discussions might go better.

Negotiations went on all day, the place selected being a narrow path on the face of a precipice, possibly in the hope that height and alcohol would affect my judgment; I don't think that it did. I noticed that from time to time General Trezzani went to a telephone on the cliff-side and spoke to someone. I quietly called my interpreter's attention to this and after a few minutes he whispered to me that this was a direct line to the Duke of Aosta. When a suitable moment occurred I walked across to the phone and spoke to the Duke, giving him a resume of what was going on. He did not seem to be in complete agreement with what General Trezzani had been saying to me; so I asked his wishes. He gave them shortly and clearly and they were very reasonable. Armed with these I returned to the conference table and felt in a much stronger position. Proceedings then speeded up but it was dusk by the time agreement was reached. As the whole countryside was full of fighting patriots and the Italian fingers were somewhat loose on their triggers as a result, I decided to spend the night with the Italians and return to my headquarters as soon as it got light.

I did not wish to spend the evening with General Trezzani as I thought we had seen enough of one another during the day's discussions. I had been talking to a bright cheerful officer who was on General Fuschi's Staff and I readily accepted his invitation to spend the night in the cave where General Fuschi had his H.Q. General Fuschi had been the G.O. C-in-C of the forces which had opposed us all the way from the Sudan. He was now unwell and seemed out of favour.

I went along to the cave and found a very cordial atmosphere, as all officers seemed determined to drink as much of the Mess stocks of wine as possible before the surrender next day. They were also playing a gramophone. At the end of one record came the Italian National Anthem. All stood up and I did the same. They thought that this was a grand gesture and looked through all their records to try and find "God Save The King" so that they might return the compliment.

In the middle of this somewhat festive party, a young officer came in and said that General Fuschi would like to talk to me. I went to his quarters in a small cave jutting off from the main cave. He was sitting in a wheeled-chair and seemed to be suffering from rheumatism or arthritis. He received me very graciously and we started to discuss the battle.

He said that he had been convinced that we would attack via the Falaga Pass, as that was the way the Italians had captured the position when fighting the Abyssinians. He had frequently studied this attack and had come to the conclusion that this route offered the best chance to success and had disposed his troops accordingly. An example of the danger of preconceived ideas.

I then asked him if his Staff agreed with his appreciation. He replied :— “No. Not all” and added that some of his senior officers thought that the attack would come along the main road. They pointed out that this main road had to be captured eventually and argued that we had come in on the main road at Barentu, Keren, Agordat, Ad Teclasan and Massawa.

In regard to our actual attack, he said that no one had deemed it possible to concentrate such a large force on the bare hillside without being seen and that they had ruled out that approach as being much too difficult. An example of placing too much faith in a natural obstacle and an underestimation of the opposing forces, whose wonderful discipline made this surprise concentration and concealment possible.

The Duke had asked that he be allowed to remain in his H. Q. in Amba Alagi until all his troops had marched out into captivity, on the analogy of the Captain being the last to leave the ship. This request was granted and he gave a lunch party before he left. At this he discussed the battle and recommended one of our Indian soldiers, whose gallantry he had himself seen, for a posthumous V.C. He received the I.O.M. At the end of lunch, at which he had been a charming host, the Duke asked that the silver on the table might be presented to the various units who had attacked and captured Amba Alagi so successfully.

FINIS

The job of the 5th Indian Division was now finished in Abyssinia, and we soon received orders to embark at Massawa for further adventures in the Middle East. Div. H.Q. were due to sail in the same ship as The Transvaal Scottish and they wished to receive General Mayne, the Divisional Commander, on board with suitable honours. This was all laid

on but, as we were leaving the quay in a launch another intercepted us, and an officer from The Transvaal Scottish said that he was very sorry, but would the General postpone his arrival by half-an-hour, as the ship's head cook had just died of heat exhaustion and the band had to play him over the side before they could play the General on board.

We went back to the quay to smoke a pipe for half-an-hour, and while strolling round I saw three British Other Rank Sappers looking somewhat lost. I went up to the sergeant and asked if I could help. To my surprise he said :—"Just which port in Iraq is this, Sir?" I told him it was Massawa in the Red Sea. He replied :—"Good God ! We must have got on the wrong ship in Bombay. The whole place was so security minded."

That concludes this talk. I hope that as a result of listening to it you will realise that there are some lighter moments in the grim business of war.

THE CHAIRMAN : There is nothing for me to say about the lecture. Its effect on all of you is obvious. I would only like to add one small story. During the period General Russell has been talking about, I was G 3 when he was G 1. One day, shortly after we had captured Asmara and the night clubs had started to open up, I came to him in his office and asked permission to have the evening off. He agreed, and then asked me where I was going. Rather hesitantly, I told him I was going to beat it up that night at the local night club. He responded immediately and thought it an excellent idea and asked whether he could come along too. Again hesitantly I pointed to his red tabs and said that if we had a brass hat with us the fun would be less fast and furious. General Russell dealt with the situation immediately. He whipped off his red tabs and badges of rank, slipped on a Major's badges, and the rest of the evening need not be described. Sufficient to say it was hilarious.

On behalf of us all I would like to thank General Russell very much indeed for his talk. It will be remembered for a very long time by us all. This talk is more or less in the nature of a goodbye talk to the United Service Institution as he is leaving us shortly. But, knowing his fondness for all of us and the Indian Army which he has served so well, I hope he will keep on visiting India—in fact I am sure he will. Whenever we are fortunate enough to have him again in Delhi, I hope he will talk to us all on anything he likes, as he has talked today. I wish to thank him very much for his talk. (*Applause*).

DEFENCE PRODUCTION

BRIGADIER B.D. KAPUR*

A CHAIN of factories is being set up to meet the Defence Services' requirements. The planning of such factories needs examination.

Although the Services will have specific requirements, as far as possible these factories should form part of the national development plan. For economical planning in defence production, all modern countries such as the United States of America and the United Kingdom have attempted to mobilise the resources of existing potential, or helped in the expansion of private enterprises to meet the Services' requirements. Even in Germany Hitler mobilised the nation to meet the Army's requirements without upsetting the interior economy of the country—the factories still had a side-line in commercial products. We in India who are working hard at putting down factories might draw some lessons from other countries and put factory planning on a recognised, sound basis. In this article an attempt is made to clear our minds in this regard and specific proposals are offered for consideration.

SERVICES' ASPECT

In the planning of Defence factories the General Staffs of the Services have a direct concern in two important respects: (1) assessing the quantitative requirements, and (2) the location of factories in the country from the strategic view-point. If both these aspects are ignored, neither will the factories be based on the production requirements of the user, nor the security of defence production assured in an emergency. Detailed examination would clarify the position.

Services' Requirements

Various important considerations arise in the early stages of planning to assess the needs. The needs of the Services are never constant; they are apt to vary with the trend of developments; what may be required

* The views expressed in this article are those of the author and have no official basis.

today is not what would be required 10 years hence. Forecasting and pre-planning will therefore be based on the needs of the Services as assessed now, as well as on the trend of future requirements. When the Services have given an indication of their needs, this should be progressed further and associated with other allied needs of the country, thus providing the necessary side-line to production and essential increase in capacity to ensure economical production.

Standardization

When the assessment of requirements is completed, the variety in types must be reduced to the minimum. In fully industrialized countries it is possible to produce equipments which perform a single role, but where the industrial potential is limited a number of functions must be met by the same equipment. In addition to the standardization in types, the next stage will be standardization of components. This will not only ease manufacture and provide a larger potential for expansion, but will also considerably ease the maintenance and supply problems in the Services.

Strategic Siting

All factories which are designed to meet vital defence requirements *in an emergency* must be so sited as to accord with the strategic and internal defence plans. Dispersion is another factor which is completely forgotten. There is always a tendency for private enterprises to concentrate in selected places. Our ports seem to be popular in this respect. In a vast country like ours, it would not be possible to provide anti-aircraft protection at every vital point. With the trend of developments in mass destruction weapons such as atom-bombs, dispersion of factories is very essential. When considering dispersion, too much spread would conflict with the possibility of static air defence. Another important point that arises in modern planning is duplication of factories. Production of vital armaments or equipments should never be concentrated in one factory so that its destruction may cripple an army. Yet duplication may not be economical. The last but not the least important fact to remember is that a factory once established cannot be moved about without financial losses, and what is more important, production time-lag.

It is thus obvious that conflicting considerations arise even in the siting of vital factories. But all these must be given due weight if defence production is to be based on a sound footing. Factories must therefore be sited to accord with the Chiefs of Staff's national defence plans.

INITIAL PLANNING

After the output required from the factory has been assessed, the necessity for such a factory should be referred to some national organisation such as a Factory Planning Review Board. The object of this Board should be to consider all industrial undertakings on a national level. The terms of reference suggested, are:

1. To locate idle existing capacity to avoid unnecessary expansion or construction.
2. To survey existing potential for expansion.
3. To survey requirements of machinery for new plants.

Projects would be put up to the Board from the military services in the form of proposals to construct, enlarge, or improve ordnance factories or to provide plant or machine-tools and equipment. The Board may suggest—

1. An alternate source of supply.
2. Using existing idle capacity.
3. Expansion of existing potential.
4. Adequacy of existing productive capacity.
5. Re-screening machine-tools requirements.
6. Deferment of construction.
7. Acceptance of new enterprise.

All industrial projects other than utility and mining should be submitted to the Review Board. When matters of defence interest are considered, even in the case of a private enterprise, Army, Navy and Air Force members should be present on the Board.

TWO ESSENTIAL CONSIDERATIONS

In addition to reviewing existing facilities, other matters which need detailed examination are raw materials and machine-tools.

Raw Materials

Raw materials can easily become a bottle-neck in production. It is not possible to cover this critical requirement unless special efforts are made to plan ahead. Some of the strategic materials are in short supply the world over. International allocations are carefully controlled. Unless we have a clear-cut policy with regard to our demands for critical raw materials, we shall not be able to make much headway in the International Materials Conference.

When little possibilities exist of acquiring such materials in an emergency, stock-piling may be resorted to, or alternative materials developed within the country.

Thus ensues the policy of conserving critical materials in co-operation with the manufacturers, substitutes being forced upon the trade to make provision for essential defence materials. To elucidate this, two examples may be quoted. In the USA, an acute shortage was noted in nickel and copper. By using nickel plating instead of solid nickel, by introducing measures to reduce the consumption of nickel in diesel engines, automotive parts, turbines, condensers and general industrial equipments, large savings were effected. In the case of copper, by substitution of aluminium and copper covering on steel instead of solid copper, remarkable savings were made.

Machine-Tools

Lack of machine-tools can seriously affect the security of a nation. The industry may be there but it cannot be geared up to meet the defence requirements if the proper machine-tools are not available. Even in a highly industrialized country like America, machine-tools have proved a bottle-neck in production. The overall requirements of machine-tools for a given period form the basis from which the necessary capacity to meet the defence demands can be calculated. In addition to the needs of the Government-controlled factories, the contractors on whom demands are placed for defence requirements, would need a large share of these. The necessity for a machine-tool factory must of course be judged in relation to the planning of other factories. Every foreign firm which is helping us to set up a particular factory imports machine-tools of its own make, although some of these could be manufactured in our factories. Machine-tool requirements should therefore be carefully assessed in any review that is carried out to estimate existing facilities.

FINANCE

One factor which seems to be consistently ignored in the planning of factories is the cost of production of one unit. The whole economy of a new factory is dependent upon the sale value of the article of manufacture. In the case of expensive materials the question would be whether budgetary estimates would permit of their production up to the capacity envisaged; once the capital investment is completed, the output of the

factory must be related to the purchasing capacity of the organization concerned. The engineering capacity for manufacture may be there, but the funds may not be available to make the purchase. These are matters of no small importance.

RESEARCH AND DEVELOPMENT

Our research and development organisations in the country have taken a lead over the factories. These organisations should be directly related and affiliated to national factories. Problems of substitutes for unavailable raw materials, new designs to meet new requirements, developments in engineering techniques and manufacturing processes are well-known bottle-necks in production. The research effort should be available at call to overcome all such impediments to progress. Research and development projects which are guided and watched closely by the user concerned, show quicker results than those left to be progressed by complex administrative machinery.

ORGANISATION

By merely setting up a factory, production of articles concerned is not achieved automatically. Where specific demands qualified by rigid specifications have to be met, the process will be long. Unless an organisation staffed by competent and adequate personnel exists little can be achieved. Experience in modern countries has shown that such organisations not only quicken the pace of development but by closely following up every detail of a project bring about over-all economy of effort and expenditure. There has been a tendency to decry such organisations as too expensive and this has resulted in protracted delays in progress and lack of clear understanding of user requirements.

While an extensive and extremely complicated organisation might defeat the purpose for which it is set up, yet the necessity for a co-ordinating authority between the specification of the requirement and the manufacturer cannot be ignored. Such an organisation will ensure that the user's demands are translated into finished articles within the specified period by clearing all bottle-necks. The impact of such control on the national economy is also to be borne in mind. In fact it will help to achieve the high ideal of self-sufficiency with the planned development of industries in the country.

A suggested outline organisation which should meet our immediate requirements is shown at Appendix 'A'. This is a 'Defence Production Board' to function under the chairmanship of a Deputy Minister for Defence Production who will have no other portfolio. The main feature of this set-up is that it would bring under one head at ministerial level the various Ministries which are concerned with the production and supply for the services. Suggested terms of reference for this Board are:

- (a) Ensuring a gradual programme of development of weapons and equipment to attain self-sufficiency in defence material in the minimum period possible.
- (b) Planning of new production including provision of production facilities such as machine-tools, raw materials, and other equipment which will enable the factories to meet the defence requirements with the minimum of delay.
- (c) Building up of the industrial capacity in close co-ordination with the Industrial Council of the Planning Commission so that planning for production is placed on a national basis.

For the vast task this Board will have to undertake a permanent secretariat with a senior Service officer at its head would be essential.

CONCLUSION

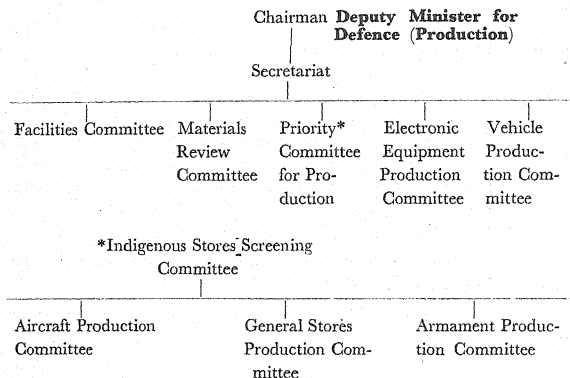
I have commented on the existing methods of setting up defence factories, and indicated a line of thought for production to meet defence requirements based on a brief survey carried out by me during my recent tour abroad.

If national security is the bulwark to all national planning, the Services must be associated with the planning of not only defence factories but all factories of national importance. Other matters such as assessment of existing facilities and raw materials which have an important bearing on factory planning, and in the case of raw materials can become a major bottle-neck in production, should be given detailed consideration.

An organisation has been suggested to ensure that all aspects of planning are covered. This organisation is based on a structure of Committees. Unless the Committees can be established on the strong foundation of a permanent secretariat with staff competent to deal with every problem raised, this organisation will achieve nothing. A competent and fully staffed secretariat is an essential adjunct to any committee organisation.

Appendix 'A'

DEFENCE PRODUCTION BOARD



Note :- (1) At all these Committees, the users (*i.e.* Services), technical experts, manufacturers and Finance are always represented. Other Ministries interested would also be represented.

(2) *These Committees are already in existence.

ADMINISTRATORS OF TOMORROW

BRIGADIER RAJINDER SINGH PAINTAL

THE recent acceptance of 'sound administration' as a principle of war has served to remind us, if such a reminder was at all necessary, of its importance as a function of command. Recognition of its importance, however, is not enough. We must understand its full implications both in the planning and in the execution stages of any operation. We must be fully aware of the impact of good or bad administration on the outcome of a battle. The last war which is still fresh in our minds has proved that sound administration is a battle-winning factor. But human memory is frail and fast fading and unless adequate measures are taken now, this lesson may well pass into oblivion.

It can be stated without fear of contradiction that the standard of administrative staff work in our divisional and lower headquarters is inferior to the standard of staffwork in other branches. Generally speaking, our young officers feel at home writing 'G' appreciations and orders, but feel uneasy when asked to write administrative appreciations or orders. In fact quite a number of officers express considerable surprise at the mention of administrative appreciations. The old and erroneous impression that it is the tactical dog's privilege to wag the administrative tail still persists.

The weapons of tomorrow, with their vastly superior powers of destruction, longer ranges and greater accuracy, will make administration a very complicated affair. The future administrator will have to contend on the one hand with the increased strategic and tactical mobility of forces, and on the other with the impracticability of large concentrations of men and material and large-scale movement. The future is very likely to see increased emphasis on sound administration.

The importance of sound administration has been recognised ever since war became an organised human activity. Sun Tzu the Chinese [thinker has emphasised this in his "Art of War", one of the first treatises on war written about 500 BC.

If the administrators of tomorrow are to take their rightful place in a command set-up, if they are to free their commanders from administrative worries, if they are to ensure that good tactical plans are not sacrificed at the altar of indifferent administration, if they are to afford their commanders freedom of manoeuvre and action, they will have to possess a high degree of imagination, ingenuity, drive, resourcefulness and initiative. It is imperative, therefore, that our junior leaders are given the necessary incentive and encouragement to study administration so that they not only understand the essentials of its technique but also keep its standards alive and try to improve on them.

The first essential for such systematic and progressive study is to develop in our young officers a flair, a genuine liking, for administrative work. Without this flair, sound administration which is the result of consistent and sustained hard work, would be difficult to achieve. Flair for administrative work does not come easily at first but once it has taken root it grows on you and becomes a passion which seldom reaches satiation. Unhappily for us, this flair is lacking in our young officers. The majority of them consider administration an irksome, tedious and prosaic business, without any glory or reward attached to it. It is looked upon as a field for the unimaginative and unadventurous back-benchers. Nothing, of course, could be farther from the truth. It is fascinating work and calls for a fertile and flexible mind.

Ask any representative group of potential staff officers their preferences for staff jobs and you would be surprised to find that a majority of them would put down General Staff branch as their first choice. They would reject out of hand all your arguments to persuade them to take up administrative jobs, and would consider your efforts as an indication of your underestimation of their capabilities and an insult to their intelligence.

This is an unfortunate trend and must be curbed. Every unhealthy trend of thought in a body of men has its origin in certain false notions and beliefs, and the remedy will lie in removing the underlying causes.

Let us therefore consider exactly what the root causes are and determine ways and means to remove them. There is a marked disparity in the importance and honour attached to the position and status of the two main divisions of staff officers. Although the two principal staff officers in a particular headquarters have direct access to the Commander and are

personally and individually responsible to him for the efficient and smooth running of their respective branches, the principal staff officer on the general staff side is usually accepted and looked upon as next to the Commander himself. This puts the general staff appointments at a premium and confers on the incumbents a sense of self-importance.

After a successful operation, which is made possible just as much by sound administration as by anything else, all the spot-lights are turned on the 'G' side. The administrator's share of the glory is often his own sense of satisfaction.

The General Staff is the successful actress, the centre of world applause, whereas the administrator is the costume designer, the make-up expert, the stage manager, the art director, and the cameraman all rolled into one, whose long hours of silent work away from all the glamour, have made this success possible.

Those who may still have any doubts have only to visit any headquarters. They would see for themselves that the 'G' staff officer is always situated next to the Commander. His office has better furniture and fittings and the whole atmosphere is designed to give it importance.

A less apparent but more serious effect of this closer personal contact between the Commander and his principal general staff officer is that plans are often presented to the Commander without proper consideration being given to the administrative problems posed, or what is even worse, with the general staff idea of what the administrative staff can or cannot do. The administrator often gets cut and dried plans and is expected to shepherd them to a successful conclusion by a process of muddling through. The consequences are all too obvious to need any comments.

The majority of our junior officers regard a general staff appointment as a better qualification for command than an administrative staff job. Hence every aspirant for command tries to hitch his career wagon to the ascending star of general staff work. Nothing could be farther removed from the reality. Detailed knowledge of administrative work is just as important for a successful commander. All the captains of the past have stressed this.

Administration is hard work depending for its efficiency on the meticulous working out of every detail. The administrator's armoury

consists of cold, hard and unbending facts and figures, without the softening influence of 'ifs' and 'buts'. Administrative plans do not lend themselves to happy reasons marshalled in retrospect to justify their failure.

There is no break in administrative work. There is no 'Thank God the operation is over and we are going out of the line for a rest and refit'. To an administrator rest and refit mean new plans and new headaches. He has no respite.

The administrator has to work at least one stage ahead to do his job well, for the simple reason that administrative arrangements take very much longer to mature. There is a considerable time-lag between the start of an administrative plan and the maturity of the project when the administrative machinery is fully warmed up and ready to take the load. This calls for a high degree of foresight and pre-vision almost bordering on the art of 'second sight'.

Mistakes in administrative work are very difficult to cover up. Either the administrator has clearly visualised the exact load and worked out, with meticulous care, his resources and how to carry the load, or he has not. Either he has delivered what is required, where it is required and when it is required, or he has not. No amount of resourcefulness in junior commanders or the valour of troops can persuade mechanical transport to run without petrol or guns to fire without ammunition.

Aptitude for administrative work can be developed by carefully planned and progressive training. Good administrators cannot be turned out of the assembly line, overnight. Training in administration must start right at the beginning of an officer's career, in his OTS or the Academy.

It should not be treated as a mere adjunct to but as an essential part of the curriculum. It should start with the basic and elementary aspect of administration and be progressively planned.

The training should be continued in the units which the young officers join. It should form an integral part of all indoor and outdoor exercises, both with and without troops. At present it is not getting the attention it deserves. All too often one sees that exercises either have no problem on administration or a short sketchy problem is introduced at the very end. This is not good enough. Administrative problems should be well thought out and of a standard compatible with the age and

service of those under instruction. The situations presented in all the problems should be such that their appreciation is materially affected by administrative considerations. This is the only way to teach the correct relationship between administration and tactics. Administration is the backbone of a good tactical plan.

The training should then be progressively arranged in the Army schools of instruction at all levels.

There is also a dearth of good literature on administration. The officers have to pick it up in bits and pieces from a variety of manuals and other books. There is thus a great need for a manual which will guide officers' study and thoughts on administration.

It should be explained to all officers through orders, conferences and lectures by senior officers that an administrative staff job is an essential qualification for command.

Last but not least the present-day disparity in prestige between the two principal staff officers must be eliminated. As this disparity is the result of steady evolution over a period of time the normal method of advice and persuasion may be too slow and ineffectual. It is up to commanders to close this gap.

In addition there is a case for the introduction of a chief of staff at brigade and divisional headquarters. The chief of staff would be an officer of more service and experience than either of the two others. He would eliminate the possibility of one-sided appreciations and advice being given to the commander and also restore the position of the administrative staff officer vis-a-vis the general staff. He would relieve the commander of the detailed day to day routine work and give him more time and leisure for other more important matters. It would no doubt pose financial and manpower problems, but the advantages of the system far outweigh the disadvantages.

FRENCH INDO-CHINA—A GEOPOLITICAL STUDY

FLIGHT LIEUTENANT D.R. SETH, I.A.F.

FRENCH Indo-China is very much in the news now-a-days due to the struggle going on there between the French forces and the Viet-Minh. Unfortunately we in India know very little about this country which lies so near our eastern borders, although from the point of view of grand strategy few lands should be of greater interest to us.

The position of the region, at the south-east corner of Asia, has made it a passage-way for many migrations in the past. Mongols from China, people from South India, pirates, missionaries and European traders have all invaded the country at one time or another in the last thousand years or so. Not once but many times, the people of the country have been ousted from their lands by newcomers. Civilisations have arisen and decayed, leaving only a few relics overrun by the jungle.

HISTORICAL BACKGROUND

In old times, the northern provinces of Indo-china *i.e.*, Tongking and Annam formed part of the Chinese sphere of influence. They were in and out of the Chinese Empire from time to time. But though they acknowledged Chinese rule they were allowed to remain under their own chieftains, and to retain their own customs. When in the 10th century the Chinese Empire weakened and declined, Annam gained its independence. A series of princely families ruled the land but continued the tradition of Chinese culture.

With political independence came cultural independence. The Annamese developed a less difficult form of writing than the Chinese characters. A national literature written in it began to appear. In art, too a native style arose.

South of Annam there existed the Kingdom of Champa. Indian influence was marked among the Chams. This state had as its capital the city of Indrapura, some distance south of the present Hue. Under Indian tutelage the Chams became civilised. From marts on their

indented coast commerce flourished, with China on the one hand and with India, Arabia, and Persia on the other. Intermittent warfare was waged between Annam and Champa. In the 15th century most of Champa was annexed by Annam.

In the valley of the Mekong, to the west of Annam and Champa arose the kingdom of Cambodia. Here among primitive peoples Hindu colonies were founded in the third century before Christ. By the fifth century these Indian colonies had given rise to two kingdoms whose monarchs claimed Indian descent. In the middle of the 6th century the two kingdoms were united to form the Cambodian Empire. Here in the 12th century was built the huge temple of Angkor. Invasions plagued Cambodia from the very beginning and eventually reduced the realm. The Chams pressed in from the east. At various intervals over the centuries came the Siamese and the Annamese. Angkor was abandoned and covered by jungle.

Into this medley of peoples came French rule, in the second half of the 19th century, bringing with it Western civilisation and imposing an incomplete and superficial unity.

French political rule came in the wake of French Roman Catholic missions, who made many converts and also dabbled in local politics. The result was that in the 1850's a definite anti-Christian feeling prevailed in the country and Christians began to be persecuted. In 1858 because of attacks on French missionaries French forces intervened. France conquered the three eastern provinces of Cochin China and in 1863 the Emperor of Annam was forced to sign a treaty recognising French supremacy. In the next five years Cambodia was turned into a protectorate. In 1873 Tongking was acquired. In 1893 Laos was occupied.

By the Act of 1887 French territory was brought together administratively under a Governor-General. For the next half century Indo-China was governed like any other French colony.

NATURAL LANDSCAPE.

The country is divided for purposes of government into five areas which coincide in many respects with geographical units.

- (i) Cochin-China includes the rice-growing area of the Mekong delta. Much of the area is still occupied by marshland, but two-fifths of the whole is cultivated and fairly densely

- populated. The town of Saigon, situated to the east of the delta proper, is the great port of the region and is important in the rice trade, since rice is produced in the hinterland much more than the need.
- (ii) Cambodia, is a much larger area. The land is but thinly populated. Fishing in the great lake of Tonle Sap is very important. The principal town is Pnom Penh on the Mekong and is accessible to ocean-going vessels.
 - (iii) Laos is the country behind the Annamese mountains and cut off by them from the sea. It is a tangle of forested hills and plateaus with valuable forests and is very inaccessible and undeveloped.
 - (iv) Annam is the great mountainous ridge and its coastal strip which stretches for a long distance along the coast. The most important part is the succession of small basins separated from one another by spurs from the mountain range, which reach the coast itself. The comparatively small area of flat land and its difficulty of communications have resulted in the capital Hue and its port Tourane being smaller and less important than the principal ports of the north and south.
 - (v) Tongking consists of a series of broad river valleys, notably that of the Red River and its tributaries. It is separated by lofty forested spurs from the Yunnan plateau of China. The chief town is Hanoi, the capital of the whole of Indo-China. Haiphong is the principal port.

HUMAN LANDSCAPE.

In its physical character the population of Indo-China is largely derived from South Mongoloid peoples who were pushed south into this region by the expansion of the Chinese. Common cultural affinity with the people of the Far East is indicated by the monsyllabic languages and the Buddhist religion. Moreover along the coast the effect of Chinese immigration is clearly seen in the cult of ancestor worship among the people, the forms of their art and the type of irrigation they employ.

Indian culture was brought in during the early centuries of the Christian era by Hindu merchants and adventurers, who for sometime

formed the ruling class in the western part of the country. To these people are due the storage ponds, which recall the irrigation of the Deccan, and the wonderful temple of Angkor.

The present day Indo-Chinese are not a homogeneous people. In view of this diversity it is important to stress the overwhelming preponderance of the Annamese. They are not only the most vigorous people but they are also more numerous than all the rest put together—about 20 million out of the total of 24 million. They inhabit all the most fertile and populous areas, Tongking, the eastern coast-line and Cochin China.

Tongking is one of the most densely populated areas in the world. In the Red River delta the density is over 1,000 per square mile. The non-Annamese areas are very sparsely populated. The total population of Cambodia is about 3 million with an average density of 45 to the square mile. Laos has a population of no more than a million and a density of ten to a square mile.

The vast majority of the people are peasant farmers; in most cases they own their own farms.

It is thus clear that the people of Indo-China are not homogeneous, racially, culturally or politically. They cannot provide first rate manpower as they are neither technically trained nor technically minded.

CLIMATE

The climate of Indo-China is that of an inter-tropical country, characterised by dry and wet seasons, but with diversities due to differences of latitude, altitude and exposure.

It is dominated by the two great monsoons, the north-east monsoon from November to March which causes the dry season over most of the country and the south-west monsoon from April to October which causes the rainy season. Climatically the country can be divided into three parts. In Northern Annam, Northern Laos and Tongking the dry season is relatively cold and the rainy season is marked by strong sea-breezes and storms. In Central Annam conditions suggest a comparison with Madras for the rains are prolonged to February while the heat is excessive from May to August. In Cochin China, Cambodia and Southern Annam the temperatures are higher throughout the year, and the hot season especially trying.

NATURAL RESOURCES

Food

Indo-China is self-sufficient as regards food. Rice is the principal agricultural crop and the staple food of the people. Large quantities of it are exported. Rubber is grown in moderate quantities. Cotton is cultivated all over the country. Tea grows wild in Upper Laos. Cocoa and coffee are cultivated in Tongking and Cambodia. Cinnamon, cardamoms, ground nuts, sesame, sugar cane, pepper, tobacco and indigo are also grown.

Industries

The most important mines of Indo-China are the coal mines near Honggay east of Haiphong in the Red River delta. These produce nearly $2\frac{1}{2}$ million tons of good smokeless anthracite a year. Other metals found include tin, zinc, tungsten, chromium and antimony. Gold and iron are also found in small quantities. At present most of these minerals are exported. There is plenty of potential hydro-electric power available, but it has not been developed.

Indo-China has the basic raw materials of heavy industry in abundance and can also supply textile fabrics, rubber, vegetable oils, timber and other requirements of light industry. Of all the lands of south-east Asia, Indo-China is best endowed for industrial development.

Modern industry is now limited to the great cement industry of Haiphong based on the Tongkinese coal and the limestone of the eastern Annam coast. Besides this there are a few match factories, rice mills, sugar factories and textile mills.

Indo-China completely lacks heavy industry. There are no iron and steel or chemical factories. It has thus very little industrial potential.

COMMUNICATIONS

Due to the topography of the country Indo-China is not very well supplied with communications. There are about 2,100 miles of railways connecting the capitals of the various parts of the Union. Of these the chief lines are the Trans-Indochinois (1,160 miles) connecting Saigon with Hue, Hanoi and Haiphong. Another line is the famous Haiphong-Yunanfou Railway (524 miles). A newly constructed railway in the south-west connects Phnom-Penh with Thailand. In general the railway lines follow the waterways and are paralleled by roads. The railways are three-fourths state owned.

Indo-China is well-endowed with good waterways, notably the canal network of Cochin China. In that colony there are about 3,500 miles of navigable waterways, and in Cambodia 875 miles. Two-thirds of the Mekong River is open to navigation throughout the year. The Red River is navigable for about 300 miles from its mouth.

As regards roads, there are about 5,600 miles of colonial routes and 1,200 miles of local roads in Indo-China.

Saigon is the principal port and distributing centre for the country as far north as Tourane. From the port of Haiphong, in the north-east, are shipped the products of Tongking and Northern Annam.

Much of the eastern shore line is inhospitable and without shelter; an important exception is the magnificent harbour of Cam Ranh Bay, a partly developed naval base.

PRESENT-DAY POLITICS

As in their other colonies the French followed a policy of assimilation in Indo-China. The adoption of the French "Way of Life" taught the Annamese two things—a passion for liberty and approval of revolutions. As a result a nationalist movement grew up in the late nineteenth and twentieth centuries. A great Annamese scholar, Phan Chau-Trinh, who founded the Tongkinese Association of Free Education, commented learnedly on Rousseau and Montesquieu, and the leaders of the French Revolution. De Tham, perhaps the greatest of Indo-Chinese revolutionaries, an associate of Sun-Yat-Sen, had also imbibed the products of Western democracy. He was assassinated in 1908, and after that the nationalist movement veered away from court circles. During the First World War the boy emperor Duy Than headed the nationalist revolt, but was captured and sent to join his father and brother in exile.

The effective life of the nationalist movement dates from 1925, when Ho Chi Minh, an Annamese Communist, arrived in Canton from Moscow to organise the Annamese Communist Party. Ho Chi Minh proved to be a resistance organiser of great skill and as a result of his work the communists have dominated the nationalist movement. In 1929 an attempt at a terrorist movement was made by the assassination of a high government official, followed in 1930 by a mutiny at Yenbay. The attempt was not properly organised and was put down by the French with a heavy hand. The failure of the revolution drove the communist leaders into exile.

After the Second World War the nationalist movement emerged much stronger and more confident. Two groups of Annamese nationalists had their headquarters in Kunming during the last years of the War : the communists under Ho Chi Minh and the non-communists who enjoyed the support of the Chinese Government. The Communists, however, were better organised and so when the Chinese occupied North Indo-China in August, 1945 and permitted the establishment of an independent Annamese state of Viet Nam, it was they who secured the dominant part in the Government set up. In the South the British occupied Cochin China and let the French in. The French authorities were soon able to turn out Viet Nam officials and restore their own administration.

As a sop to the nationalist movement the French suggested a plan for a federation, within the French Union, of Cambodia, Laos, Cochin China and Viet Nam. An agreement was signed, on these lines, on 6th March, 1946. But the French suffering from an inferiority complex determined to block the agreement by the proposal to separate Cochin China from Viet Nam. On the other hand Ho Chi Minh, who called his party the Viet Minh, insisted on the Union of the whole country. Negotiations between the French Government and Ho Chi Minh dragged on for many months. The conferences at Fountainebleau in June and July did little to ease the situation. In November, 1946, fighting broke out again. French garrisons all over the country were attacked. The Viet Minh were not successful in overwhelming the garrisons in the towns but established a firm hold on the countryside. The result has been a still unresolved Civil War. The inclusion of Cochin China in Viet Nam is no longer the issue. The issue now is whether Ho Chi Minh and the communists, with whom, since the rising, the French refuse to negotiate, or a government under Bao Dai, pledged to co-operate with the French, shall rule Viet Nam. Whatever the result of this endless, stupid and bitter war might be it has already brought great suffering to Indo-China and cost France far more in lives and money than she can endure.

The disturbed political conditions in Indo-China are a threat to the security of India. It cannot be forgotten that the occupation of Indo-China was a preliminary step to the Japanese invasion of Burma.

JUDGMENT ON OFFICERS

COLONEL H.C. VIJH

EVERY year unit and formation commanders have to deliver judgment on the officers under their control in the form of confidential reports. These confidential reports on officers are used as a major guiding factor in deciding their postings and promotions.

If confidential reports do not correctly reflect the merits and demerits of the officers on whom they are written, postings and promotions based on these can result in square pegs being fitted into round holes and the less meritorious superseding the more meritorious. The baneful effect of this on the overall efficiency of the Services can be serious, apart from the injustice to individual officers involved, which in turn again affects efficiency by lowering these officers' morale.

The reasons for not writing a confidential report correctly can be multifarious. Some of these are : malice, favouritism, inferiority complex, insufficient observation, incorrect judgment, lack of clear understanding of the various traits of personality, ability and character, and lack of power of expression.

The capacity to express an honest and dispassionate opinion on another individual, without malice or favouritism, is a national characteristic which no doubt diminishes in a people in bondage. With more years of freedom, this characteristic, which is the direct result of a free spirit normally, is bound to improve. Also, insufficient observation and incorrect judgment are failings which a gradual improvement in the psychological education and training of officers will help to dissolve in due course.

By far the most common cause of writing confidential reports incorrectly is the lack of clear understanding of the various traits wished for in the officer to be reported upon and the lack of ability to interpret and express correctly whatever the writer of the report may have comprehended in his observation. It is the intention in this article to try and provide aids to officers for overcoming this failing as far as possible.

THE QUALITIES THAT MATTER

The qualities that matter in gauging the calibre of a military officer by and large are :-

- (a) Military knowledge.
- (b) General knowledge and education.
- (c) Mental alertness and vigour.
- (d) Powers of leadership.
- (e) Moral standards.
- (f) Team spirit.
- (g) Personality and manners.
- (h) Sense of humour.

HOW TO JUDGE AN OFFICER

The judgment on an officer should be the net result of how far he possesses or lacks the above-mentioned basic qualities. The presence or absence of these basic qualities, and the extent to which they are present or absent, can be conveniently judged, without exercise of any superb powers of observation and judgment and expression by the reporting officer, by following, in a broad manner, the following general guide.

Military Knowledge

Bring out the following points :—

- (a) Officer's knowledge of essential principles of employment and organisation of all Arms/Services, generally at a level one step higher than the present rank held by the officer;
- (b) Officer's knowledge of his own arm whatever his present employment;
- (c) Any pronounced military bent that the officer has.

General Knowledge and Education

Mention the following points:

- (a) Officer's academic qualifications and knowledge;
- (b) How much he is informed about current affairs and subjects of general knowledge;
- (c) How much he is interested in acquiring knowledge;
- (d) Whether he is inquisitive or indifferent about his environments.

Mental Alertness and Vigour

- (a) An officer is mentally wide awake if he
 - (i) has his "nose to the wind", anticipating events and preparing for them;

- (ii) is "on his toes", and can strike while the iron is hot;
 - (iii) does not miss important events connected with his work;
 - (iv) is considerate in his actions and does not have to rue them;
 - (v) takes interest in science, politics and other current affairs, and is up to date with the latest news;
 - (vi) is good at observing and remembering faces, names, routes and whatever he comes across;
 - (vii) is conscious of his own mannerisms, habits, strong points and weaknesses.
- (b) An officer has mental vigour if he
- (i) can concentrate exclusively on one subject and is not a "butterfly thinker";
 - (ii) can subject his mind to the strain of overcoming difficult problems;
 - (iii) can force himself to tackle uninteresting matters that must be done;
 - (iv) can get work done in a reasonable amount of time;
 - (v) has intense curiosity and interests;
 - (vi) is full of ideas and suggestions when they are called for;
 - (vii) is capable of imposing stern discipline and iron determination on a weak will (not on a weak mind);
 - (viii) does not take his problems to others for help;
 - (ix) finds it easier to let go a challenging statement than to argue or discuss it;
 - (x) goes in mostly for the "light" entertainment, *e.g.*, plays rummy and not bridge, plays draughts and not chess, reads fiction and not logic or psychology or economics or politics.
- (c) The above qualities will enable you to mention the outstandingly strong and weak points of an officer in mental alertness and vigour and to state the degree to which he possesses these qualities on the whole.

Power of Leadership

- (a) Leadership, like charity, starts at home. Only the officer who can rule himself with an iron hand can rule others. Leadership is not, like precious china, something that is displayed on special occasions. It is manifest in the behaviour of an officer at work—in the action he takes to avoid trouble or promote change before others step in. It has as little

to do with bluster and shouting as it has a lot to do with courage and understanding.

- (b) An officer has the power of leadership if he
- (i) suggests what to do when the others look blank and bored;
 - (ii) independently finds ways to improve methods and procedures he considers inefficient;
 - (iii) likes responsibility;
 - (iv) finds it easy to stimulate interest in others in his ideas;
 - (v) drives and corrects those under his supervision without causing resentment;
 - (vi) avoids unnecessary display of authority;
 - (vii) takes into account the abilities and dispositions of others when giving orders;
 - (viii) inspires confidence in others;
 - (ix) creates the desired impression by speech, writing or action;
 - (x) disregards malicious criticism if he believes that he is guiding those under him in the right direction;
 - (xi) makes decisions with confidence;
 - (xii) does not allow himself to be guided by others because he does not trust himself.
- (c) The qualities mentioned above, and other qualities of leadership that you can think of, should enable you to give a word picture of the presence or absence of the elements of leadership in an officer. Bear in mind that powers of leadership are not always 'born'; they are more often built up step by step from lesser qualities to bigger qualities.

Moral Standards

The following are some of the questions you may put yourself to judge the moral standards of an officer.

- (a) Does he take unfair advantage? For example,
- (i) Does he use his position or authority for making illicit gains in kind or cash?
 - (ii) Does he try to know influential people socially so that he may "use" them later?
 - (iii) Does he try to pry into others' past so that, if necessary, he will have "something on them"?
 - (iv) Does he have a genial disarming "front" behind which he hides his real self and real motives?

- (b) Is he conscientious? For example,
 - (i) Has he a scrupulous sense of duty?
 - (ii) Does he finish every task and accept blame and criticism?
 - (iii) Is he loyal and will he stand by his seniors, juniors and friends?
 - (iv) Is he honest to himself, *e.g.*, will he continue with his work even when he is in a position to "take it easy"?
- (c) Does he possess moral courage? For example,
 - (i) Does he stand on the side of righteousness irrespective of the consequences to himself?
 - (ii) Does he face set-backs, bereavement and uncertainty with a stout heart?
 - (iii) Is he able to stand squarely on his own two feet and do his own thinking?
 - (iv) Does he refrain from bullying others, through intimidation or use of his temper?
- (d) Is he a good sport? For example,
 - (i) Can he "take it" when the joke is on him?
 - (ii) When he discovers somebody else is preferred to him, does he stand courageously aside without causing bitterness?
 - (iii) Does he avoid "crowing" if he wins?
 - (iv) When he is in trouble, does he try to be as little bother as possible and keep his troubles to himself?
 - (v) Does he avoid "exposing" others?

Team Spirit

An officer possesses Team Spirit to the extent to which the answers to the following questions are in the affirmative:-

- (a) Is he co-operative ? For example,
 - (i) Is he "doing his share" in army welfare work?
 - (ii) Does he faithfully carry out the various unwritten customs, traditions and orders, which an officer is expected to carry out?
 - (iii) Does he show patience with "red tape" and normal procedure?
 - (iv) When he is unfairly criticised or blamed for something connected with his work, does he still try to turn out as good a job as he did before?
 - (v) Even if there is "nothing in it" for him, does he aid a fellow-worker with his difficulties?

- (b) Is he tolerant? For example,
 - (i) When he and others have different ideas, does he usually compromise?
 - (ii) Does he welcome suggestions whether or not he thinks they will improve things?
 - (iii) When he makes a decision, does he willingly change it if he feels that another's suggestion is better?
 - (iv) Does he get on well with people of all religions and classes?
 - (v) When certain people around him do not live up to his expectations, is he human enough to forgive and understand them?

Personality and Manners

- (a) To make the most of one's appearance, to be charming, to be poised, to be courteous, to be well-mannered, to be well-bred, to be sociable—all these traits contribute to good "personality and manners", which in fact make a person "attractive" to others.
- (b) To what extent an officer possesses good "personality and manners" or, in other words, "attractiveness", may to a large extent be judged by putting yourself the following questions and giving a plus mark for a 'yes' answer and a minus mark for a 'no' answer to each question:
 - (i) Is he scrupulously neat and clean?
 - (ii) Does he dress in a becoming manner as to occasion, colour, fit and style?
 - (iii) Is he tidy about little items such as shave, hair-cut, clean nails and socks pulled up.
 - (iv) Does he keep his health, energy and figure in good shape by sensible living?
 - (v) Is his posture good?
 - (vi) Is he moderate in drinking, eating, smoking and other similar things?
 - (vii) Is he polished and natural (not "affected") in his manner and speech?
 - (viii) Does he have enough ideas and animation to stimulate a dull conversation or wake up a "dead" party?
 - (ix) Can he tell a story in such a way as to catch and hold the attention of his hearers?
 - (x) Is he a sympathetic and patient listener?

- (xi) Is he a genial and generous host?
- (xii) Is he interested in a wide variety of subjects that others also find interesting?
- (xiii) Does he know table manners?
- (xiv) Does he avoid attracting attention in public by loud voice and boisterous behaviour?
- (xv) Can he pass off an embarrassing incident with a witty remark?

Sense of Humour

An officer possesses a sense of humour if he

- (a) can find the lighter side to the boring or tedious jobs that he may have to do;
- (b) does not remain aloof from the fun at a party due to self-consciousness;
- (c) looks back at embarrassing incidents and laughs at how silly he must have been;
- (d) is good-natured about being kidded;
- (e) is not sarcastic in his "funny" remarks;
- (f) indulges in jokes on the "clean" level only;
- (g) knows how to enliven morose company or colleagues, with the right type of quips.

CONCLUSION

The writing of confidential reports on officers is a grave responsibility in that it affects the future of the officers, the service and the nation. If you are a reporting officer, you cannot be too conscientious, in giving a fair, honest, dispassionate and correct report. The words you use should be well chosen and weighed to express exactly the truth. The above guide will be useful in judging an officer fairly accurately and to remind you of angles that may not readily occur to you otherwise. Bear in mind that laconic answers like 'good', 'fair', 'satisfactory', 'scope for improvement', against various traits mean little and rather reveal your weakness of expression and observation; always give a brief word picture covering the various aspects of each attribute. But, above all, remember that you cannot be a competent judge on qualities which you do not possess in abundance yourself, and it is never too late for a man to improve.

INDIA AND SEA POWER

COMMANDER V. A. KAMATH, I.N.

THE aim of this brief article is to bring home the importance of the Indian Ocean to the security of the sub-continent of India and from that to deduce the role of the Indian Navy of the future.

THE INDIAN OCEAN

It is first of all necessary to obtain a clear picture of the geography of the Indian Ocean. The importance of geographical facts on the development of history is now generally recognised and it is by a study of history that we obtain a pointer to the future.

The geographical structure of the Indian Ocean is particularly important. For the most part, its area is walled off on three sides by land, with the southern side of Asia forming a roof over it. The continent of Africa constitutes the western wall, while Burma, Malaya and Indonesia protect the eastern side. Where the Indian Ocean is so different from the Pacific and the Atlantic is in the existence of this northern wall formed by the Continent of Asia, whilst the Pacific and the Atlantic stretch in the North-South direction between the North and South Poles.

In the northern part of this Ocean, the peninsula of India juts southward for a thousand miles forming the Arabian Sea in the west and the Bay of Bengal in the east. The two entrances to this area are guarded by narrow straits, Bab-el-Mandeb in the west and the Straits of Malacca in the east. In spite of its oceanic character, the Indian Ocean is more like a land locked sea with India in a position astride the ocean routes.

ANCIENT MARITIME ACTIVITY

The Indian Ocean was the scene of some of the earliest maritime activities. The Indians and the Arabs are recognised as two of the foremost races who mastered the art of ocean sailing, navigation and shipbuilding. Milleniums before Columbus sailed the Atlantic and Magellan crossed the Pacific, the Indian Ocean was an active thoroughfare of commercial and cultural traffic. It is significant to note that whereas the Arabs were

prompted by commercial considerations, the Indians used their maritime knowledge more for the purposes of spreading their culture across the seas by means of peaceful colonisation. Whilst the Arabian Sea was shared by all the seafaring nations of the East, the Bay of Bengal was more or less exclusively used by Indian ships which have sailed across the Bay as early as 2,000 years ago during the colonisation of the Pacific islands. Prosperous Hindu colonies existed in Malaya, Sumatra, Java and Indo-China, and continuous communication was maintained between these colonies and the mother country.

An indication of the advanced state that maritime affairs reached in India can be gained by the fact that an authoritative work on administration which was written in the 4th century B.C., lays down the functions of the Board of Shipping which was one of the six great departments of the Mauryan Emperors. At the head of it was a Minister assisted by a staff of Port Commissioners and Harbour Masters. There are records of the first century A.D. which show that ships on arrival at Broach (at the mouth of the Narbada) were met by Government Pilot boats and berthed in regular basins.

As for shipbuilding, this industry was a thriving one, particularly on the west coast, where from the earliest times of maritime activity on the Indian Ocean, Indian craftsmen produced by far the fastest and most seaworthy sailing ships used in those days. This was made possible by India possessing not only one of the finest timbers available for shipbuilding, *i.e.*, the Malabar teak, but also sufficient skilled craftsmen. A description by one Nicolo Conti in the earlier part of the 15th century reads as follows:

"The Natives of India build some ships larger than ours with 5 sails and as many masts. The lower part is constructed with triple planks in order to withstand the force of the tempests. Some ships are so built in compartments that should one part be shattered the other portion remaining entire may accomplish the voyage."

From about the 13th century A.D. the supremacy of the Indian Ocean passed from the Indian into the Arab hands. From that time started the decline of India's maritime prestige. Unfortunately for the Arabs, no attempt was made by them to exercise Naval Control, perhaps because their maritime activity was a result of individual enterprise rather

than that of state policy. With their loss of control over the sea the way lay open to European sea powers who soon afterwards began intruding into the Indian Ocean. Here there was no local power sufficiently strong at sea to challenge them.

ADVENT OF EUROPEAN SEA POWER

It was the arrival of Vasco da Gama in the Indian Ocean in 1498 that heralded the entry of European sea power into the Indian Ocean. The British succeeded in India, where the Portuguese, the Dutch and the French failed, because of their superiority at sea. In their long struggle for supremacy in the East, the fortunes of the European powers on the land bear a direct relation to their fortunes at sea. 'He who rules on the sea will shortly rule on the land', declared Khairuddin Barbarosa to Sultan Suleiman the Magnificent. The history of no country illustrates this principle better than that of India.

Once having obtained a hold on the country, it was possible for Great Britain to maintain that hold from thousands of miles away, thanks mainly to her Navy. This service, popularly known as the Silent Service, operating along a long line of Naval Bases from Gibraltar to Aden maintained the vital communications with the Home country without which this hold on India was not possible. This may sound strange to one who has been brought up to believe that India was kept in subjection by the Army in India. There is no doubt that the Army was necessary for the security of the Indian Empire, but it was only possible to maintain the Army in India by exercising the vital command over the sea. The mastery over the Indian Ocean was complete but unobtrusive. Therein lies one of the main reasons why Indians as a rule were not brought up to associate the Indian Ocean with problems of defence of the country. That the country was safe from the sea was taken for granted.

This state of affairs was aggravated by the fact that whereas the Indians throughout the country were associated with or made aware of the presence of the Army, the British Navy operated unobtrusively from bases outside India. The visible signs of even the small Indian Navy were only felt at the few ports around the coast. Even this Service was however the exclusive preserve of British officers until the early 30's, when a slow start was made with the recruitment of Indian officers. It is then little wonder that there is a general lack of appreciation in India on the role of a Navy in the defence organisation.

THE INDIAN NAVY

It may be of interest to mention some significant facts about the history of the Indian Navy as we know it today. It was first started by the Honourable East India Company as the Indian Marine in the year 1613 in order to protect the Company's trade in the absence of, or to supplement, ships of the Royal Navy. This was even before the Company thought of recruiting and training an Army in India. In spite of this, whereas the Indian Army grew up to a powerful size over the period of years, the Indian Navy in 1939 consisted of only half a dozen ships, the majority of which were antiquated. It is interesting to try to find the reason for this apparent anomaly which seems to have been missed by people who have made a study of the history of India's Armed Forces.

The turning point of the history of the Indian Navy was the Indian Mutiny. Immediately before the Mutiny the Indian Navy was a powerful combatant sea service which no doubt compared very favourably with the Company's Indian Army. After the Mutiny, the Government of India was taken over by the Crown and one of the first acts of the British Government was to abolish the Indian Navy in 1863. Considering that it was only the Army that mutinied and that the Indian Navy had rendered valuable services to the Government by landing 78 officers and 1740 men to suppress the mutiny, it seems a peculiar way of showing their gratitude to the Navy ! The reason is obvious. The British were taking no chances in the future. A disloyal Army would at the worst mean temporary loss of territories in India whereas a disloyal Navy could, if sufficiently strong, cut off all British connections with India and make their position untenable in the whole sub-continent. The territories constituting the United States of America were lost to the British Crown by the failure of a sadly depleted British Navy to maintain the British lines of sea communications. They had obviously learnt their lesson.

After the Indian Navy was abolished in 1863, a small Service known as the Bombay Marine was set up. This later became Her Majesty's Indian Marine and then again later on it became the Royal Indian Marine. It was not until as late as 1934 that the Marine Service was reinstated as a combatant Navy. All the time that the Service was a Marine, its role was one limited to trooping and carrying out marine survey. The 1930s were unfortunately a period of the worst financial stringency that India had known in British days and the growth of the young Royal Indian

Navy was blocked from the very beginning. It was not until the outbreak of the last war that the Service was able to expand.

MARITIME STRATEGY

We will now turn from the past to the present. It is common knowledge that India is dependent on imports from foreign countries for many of her day to day requirements for the maintenance of modern life. These requirements will not only increase in war but will be vital for its prosecution. Because modern warfare causes a tremendous drain on the resources of a country, the ability to prosecute a war is entirely dependent on our ability to control the essential sea routes. Conversely, by denying these channels of communication to the enemy, we greatly reduce his ability to fight if not make it impossible for him to do so.

Essentially, therefore, Maritime strategy is aimed at obtaining control over the sea routes required for the prosecution of war. This control is exercised jointly by sea/air power, while the Army is responsible for protecting the bases. This type of warfare known as Maritime warfare can be defined as the employment in war of all forces working in co-operation on, under and over the sea. Although all the three Services play their part, it is obvious that maritime strategy is primarily the concern of the Navy.

The modern role of maritime forces has changed little in principle since the days when navies first came into existence many centuries back. The introduction of new weapons, may they be jet aircraft, atom bombs or rockets, have not changed the basic principles of maritime strategy. It is tactics which are based on the weapons in use that have changed radically. As long as ships are used to transport large numbers of men and quantities of materials over the sea routes, so long will navies be required for their protection. Without fear of contradiction it can be said that it is unlikely that aircraft will completely replace ships in the foreseeable future, if at all they do.

This brings us to the subject of merchant ships and their importance in maritime strategy. It has been said that the Merchant Service constitutes the fourth fighting service. Whether we agree with that view or not, the fact remains that the merchant ship is the backbone of sea power. An increase in merchant tonnage means additional responsibility for the Navy and the growth of the Navy has therefore to keep pace with increase in the merchant fleet. The present Indian merchant tonnage which is

in the region of 400,000 is sadly inadequate for our requirements when we consider that only about 5% of our overseas trade is carried in Indian ships. Not only does this result in a considerable amount of foreign exchange being lost to the country, but it also means that during a war either global or local, the country will find herself at the mercy of foreign shipowners for the transport of essential war material. Before the country achieved its independence, British vested interests and the lack of Government support, combined effectively to stunt the growth of the Indian Mercantile Marine. There is now a general awareness in the country both in Governmental and Public circles of the importance of a strong Merchant Navy in keeping with India's maritime interests.

FUTURE ROLE OF THE NAVY

It is in the context of what I have said so far that we should now consider the future role of the Indian Navy. Clearly the lesson that we have to learn is that the power that dominates the Indian Ocean dominates the security of the country. At present the balance of power in the Indian Ocean is held by the British Navy. As long as it is in friendly hands, our security is not threatened, but it can never be allowed to pass into unfriendly hands.

Two points however deserve consideration. If we continue to rely on another power, however friendly, to maintain the status quo in the Indian Ocean, it is tantamount to relying on that power for our security. This is obviously not in keeping with the independent status of a self-respecting nation, neither is it wise to do so. As an example it is worth mentioning Australia during the last war. After the fall of Singapore and the Dutch East Indies, Australia, which had until then relied on the British Navy, found to her dismay that she was virtually cut off from the West and lay open to attack. But for the immediate help given by the United States Navy, Australia would have fallen to the Japanese. The lesson of that war was however not lost to the Australians who immediately afterwards started on a programme of naval expansion aimed at attaining self-sufficiency in regard to her naval defence.

The other point is that related to our foreign policy. Although a part of the Commonwealth, India has decided to follow an independent foreign policy. If this policy is to be followed to its logical conclusion, it means that we must be prepared to take independent action when attacked by an aggressor.

The future Indian Navy should, therefore, be sufficiently strong to maintain the balance of power in the Indian Ocean. Our aim should be to expand the Indian Navy as rapidly as possible to fulfil this role. Building up a strong Navy in these waters will be entirely in keeping with the national policy of maintaining only sufficient defence forces required for the safeguarding of our independence. We have seen how it is essential for us to maintain supremacy in the Indian Ocean and that anything less than supremacy is to risk the security of the country. This is the price we have to pay for our geography, which whether we like it or not, has given us the predominant position in the Indian Ocean and as such made us more vulnerable at sea than other countries bordering on the Indian Ocean.

FRIENDLY NEIGHBOURS ESSENTIAL

The question then immediately arises as to whether our neighbours in the Indian Ocean area are going to watch a strong Navy emerging in the Indian Ocean without having qualms as to their own security. It is for our actions and our diplomacy to allay any such fears. The ideal size of a country's Navy is dictated by geographical and other considerations such as natural resources, sea-borne trade, etc. The fact that America maintains the world's largest Navy does not unduly worry or frighten her neighbours in Canada or South America, neither does it worry the Scandinavian countries and other countries in Western Europe that Britain possesses a Navy much stronger than theirs.

It might be suggested that with a powerful Navy, Indians might turn towards a policy of aggression as was done by the Japanese. People who have made a deep study of history tell us that by studying the history of a country over many centuries, they can forecast with a reasonable degree of accuracy, the future policy of that country. This is undoubtedly true, because the history of a country is shaped by several factors like geography, religion and racial characteristics which are very nearly constant factors.

Nowhere during our long history have we shown that we in India have any aggressive designs. We have always been firm believers in the motto of 'Live and let live' and have in fact suffered considerably as a result. Against this background of thousands of years of history, it is unreasonable to expect us to become a nation suddenly imbued with the idea of bloodshed and conquest. Indian history on the other hand is full of instances where we have failed because of our refusal to learn from past

mistakes. Here is a challenge that we can take up and thus ensure that we will not, at least in the future, be accused of being incapable of learning from our past mistakes.

When we talk of defence of a country, students of war have long since realised that defence based on the frontiers of a country is not invulnerable. From this grew the idea of defence in depth, which in simple words is to ensure that one's neighbours are friendly and strong. The security and stability of one's neighbours has a vital bearing on one's own security. Without considering the land aspect which is outside the scope of this article, it will be in our interest to see that no unfriendly power obtains a hold on a country bordering on the Indian Ocean. For this purpose it is essential that we maintain the most friendly relations with them and also assist them in every possible way to achieve or maintain their independent status.

How exactly can the future Indian Navy assist other friendly countries? The first thing I feel is in shipbuilding. India is the only country in this region which has made a start with shipbuilding. The setting up of this industry requires the existence of certain basic industries, the most important of which is a steel industry. No other country in this region has so far developed a steel industry and we will not be far wrong in assuming that India will regain her lost position as a shipbuilding centre of prime importance.

Then there is the question of training. The establishment of highly technical training facilities is an expensive business and is beyond the resources of many countries. There is no reason why the Indian Navy should not undertake the higher training commitments of friendly Navies in this region.

CONCLUSION

The truth of the saying "He who rules on the sea will shortly rule on the land" has, as far as India is concerned, been borne out by the events of history. That most of the troubles that India as a nation has been through are due to our inability or refusal to learn from the lessons of history, is all too clear. We can perhaps excuse the past generation of Indians for their general lack of interest in sea affairs. Conditions are now changed and the generation to follow is unlikely to judge us in a similar light if we continue to disregard the lessons of the past.

STRINGER LAWRENCE

BRIGADIER H. BULLOCK, C.I.E., O.B.E. F.R. HIST S.

VIII. LIEUTENANT-COLONEL LAWRENCE (1754-1755)

ON 1st September 1754 the *Britannia* arrived at Fort St. David with part of His Majesty's troops, commanded by Lieutenant-Colonel Samuel Bagshaw; and Starke, the Company's chief there, reported to Madras that in certain instructions from the King which Bagshaw had shown him, regarding the setting-up of a "special Council for the Conducting of all War Affairs", Adlercron had precedence over Admiral Watson, which perplexed him, as indeed it did the Madras Council.¹ As Adlercron himself was hourly expected the Council prepared a letter to await his arrival, briefly explaining the political and military background.² A further portion of Watson's squadron reached Fort St. David on 10th September, with the Admiral himself and about 200 soldiers; and he sent the Council four packets which he had brought out for them from the East India Company. Amongst the contents of these packets was Lawrence's brevet from the King as Lieutenant-Colonel of Foot, whilst Alexander Heron who had come with Watson had brought the sword awarded to Lawrence by the Company.³ The brevet was in a sealed cover addressed to Lawrence; and when at the end of the month he asked what date it bore, the Council broke the seal and replied that the commission had force from 26th February 1754.⁴

The remaining part of the squadron, with Adlercron, did not reach Fort St. David until 23rd September; and on the following day the Colonel addressed to the Council a long letter of complaints about the arrangements they had made for the provisioning of his troops and the allowances of his officers and himself. With a second letter of the same date he forwarded copies of two important documents:—

- (a) "Orders and Instructions for Coll. John Adlercron Commanding in Chief the Land Forces to be Employ'd in the East Indies, or Officer Commanding in Chief for the Time Being", given by His Majesty's Command, 25th February 1754.

- (b) "Instructions for Our Trusty and Well Beloved Colonel John Adlercron, Commanding in Chief the Land Forces to be employ'd in the East Indies or to the Officer Commanding for the Time Being. Given at our Court at St. James's", 2nd March 1754.

Apart from formal clauses and those dealing with routine matters, the principal provisions of these were:—

- (i) On Adlercron's arrival in India he was to take "command of all the forces belonging to the Company on the Coast of Coromandel", and to do his utmost to further the interest of the Company and of the Indian princes with whom engagements had been or might be contracted.
- (ii) When a "General Plan of Operation" had been concerted by the General Council which the Company had directed to be set up locally, Adlercron was to lay it before a Council of War, which if only land operations were in contemplation was to consist of Adlercron, Scott, Bagshaw (who was senior to Lawrence, as a lieutenant-colonel), Lawrence and Verney Lovett the Major of the 39th Foot; or if naval co-operation was in prospect, the same persons together with the naval commander-in-chief. Decisions were to be reached by a majority of this council.
- (iii) In correspondence he was to style himself Colonel in the King of Great Britain's Service and Commander in Chief of the Troops of the English East India Company.

The final clause of the Instructions enjoined: "In every thing you will consider the Honour of our Forces, the good of the Service, and the Interest of the East India Company, whose Territories and Commerce you are sent to Protect and Establish: You will therefore cheerfully concur in all Things which the Commander in Chief of our Fleet, the principal Officers of the East India Company, and your Council of War shall Judge conducive thereto, and for that Purpose you will use your utmost Endeavours to preserve a good Harmony and Understanding betwixt our Sea and Land Forces and those of the East India Company".⁵

These papers caused the Council much thought, and at their meeting on 28th September they reviewed the problems which seemed to them to arise and formulated their provisional views thereon. The principal point

at issue, as it seemed to them, was whether the sum total of the orders in these documents, plus certain instructions they had received from the Court of Directors which might be construed in a conflicting sense, entitled Adlercron to assume command of the Company's forces. They wrote to Lawrence asking him to advise, and also requested Adlercron to come to Madras and thrash the matter out with them.⁶ But it was hardly tactful for them at this juncture to tell Adlercron in a somewhat blunt letter that they had concluded a truce with Godeheu. Though the negotiations leading up to it had been set on foot, and carried nearly through, before Adlercron appeared on the scene, the truce had been mentioned only as a rather vague possibility in the letter which they sent him on 9th September, to await his arrival; and the abrupt announcement of it on 29th September as a *fait accompli* was hardly calculated to attract his good-will.

On 8th October Adlercron replied: "Though the letter I had the pleasure to receive from the President and Council of Fort St. George of the 28th September was not directed with the title with which His Majesty has thought to honour me or in the form it ought to have come... I have sent Lieutt. Coll. Bagshaw the Second in Command with as full powers as at present appear to me necessary... I was very much surprised... that a suspension of arms with the French was agreed on without my being acquainted therewith: I have desired my Lieutt. Colonel to enquire the reasons that occasioned it, and why I was not consulted before it was accomplished, as I look on it as a step of the utmost consequence both to the Company's interest and the service in which I am employed."⁷

Bagshaw seems to have carried this letter with him to Madras, and when he got there took a firm line with the Council, so much so that they decided to defer discussion until Lawrence and Pigot could join them and contribute their advice.⁸ Lawrence had already written from camp taking the line that Adlercron's claim were well enough founded and deprecating their being challenged.⁹ Leaving Kilpatrick in command in the field, he reached Madras on the evening of 29th October and a Council meeting at which he and Pigot were present took place on the 31st. A great measure of agreement was evidently reached in the short time since his arrival, probably through his good offices, for Saunders was able to produce a draft agreement "drawn and deliver'd to him by Lieutt. Coll. Bagshaw." Its "Regulations" contained six clauses, from which we quote:—

- (1) "His Majesty's Commander not to exercise any Authority in

the Settlement Garrisons of Fort St. George, Fort St. David or any other Settlement the Company's President and Council may think necessary, nor over the Troops and Sepoys quarter'd by them or employ'd within the Bounds of the said Settlements."

- (2) "The President Governours & ca to the Company will on all Occasions of Intercourse with Colonel Adlercron or the Commander in Chief for the Time being, give him the Title in the Preamble of his Instructions Vizt. Commanding in Chief the Land Forces in the East Indies".
- (6) "In every other Matter both Parties shall exert themselves to promote the good Harmony, Understanding and Friendship which ought to subsist between them and which is so necessary to the Common Good." The portions here omitted dealt with such matters as the holding of regimental courts martial without reference to Adlercron, and the rendering to him of returns of the Company's forces. This agreement was to hold good until the pleasure of the Court of Directors was known.¹⁰

Meanwhile Heron had taken office, up country, as "Major of the Company's Forces on the Coast of Coromandel". He was a lieutenant-colonel in the King's service, and senior in that rank to Scott and Lawrence; but he had agreed to waive his rank and seniority whilst employed by the Company as a major, and even to take rank below all majors in the Company's service.¹¹ Kilpatrick remained at Trichinopoly as commander of the fortress. The armistice had now become effective, but both officers kept a watchful eye on the movements of the French and their allies.

We have related that the Sword of Honour, encrusted with diamonds and worth £750, reached India by the hand of Heron in mid-September. It was presented to Lawrence in Council, by the Governor.¹² Though this mark of the appreciation of his "Honourable Masters" the Court of Directors, coupled with his new commission as a King's lieutenant-colonel, emphasised the regard in which he was held in the United Kingdom, the effect was spoilt by his replacement by Adlercron. Orme, who was on the spot (he had been a fellow-traveller with Heron) and whose name we now find as a regular attendant at the Council meetings at Madras, tells us that "these distinctions however did not countervail his sense of the neglect which had been shewn him by sending Colonel Adlercron... to command the

English troops in India." Still, Lawrence must have been glad of a respite in the comparative comfort of Fort St. George ; hostilities were over for a while ; and the amicable agreement with Adlercron seemed to promise well for the future.

The Madras Council thought that the *Governor* had now been appointed Commander-in-Chief of the Company's troops, by the orders in the Directors' dispatch from London of 2nd March 1754 ; but that dispatch as summarised in the *Calender of Madras Dispatches* 1744-1755 contains nothing to support their view. The point is of little practical importance, for Lawrence in fact performed only the duties of Second in Council after Adlercron's arrival—which is perhaps what the Directors intended.¹³ Nor does it seem to matter whether Lawrence refused to serve under Adlercron, as is asserted by some writers. We have found no evidence in the records of an overt refusal, and we doubt if there was one ; but as Second in Council he was not subject to Adlercron's command or even to his interference.

Adlercron soon jibbed at adding his signature to the others which had been put to the draft agreement made through Bagshaw when it was approved by the Council,¹⁴ on the ground that it conflicted with the King's instructions. He called a council of war to advise him on the point, and said that many of his officers as well as himself were " apprehensive I may incur his Majesty's displeasure should I enter into such a Written Agreement."¹⁵ He had remained in comparative isolation at Fort St. David ever since his arrival from Europe, and his initial visit to Madras was not paid till 9th December.¹⁶

The year 1754 closed on a peaceful note, for under active discussion were the terms of a more lasting suspension of warfare which was to have effect—and did in the event come into force—from 11th January 1755. It took the shape of a conditional treaty, which was subject to ratification by the English and French Companies at Home. As Orme points out, this amounted to an armistice to hold good for eighteen months, for it would take that time to learn whether the authorities in Europe accepted it or rejected it. One of its clauses provided for the exchange of prisoners on a man-for-man basis, and as the French only held 250 against the 900 Frenchmen in British hands, 650 of the French remained in captivity. Dupleix had left Pondicherry for France on 14th October 1754, and on 13th January 1755 Saunders also embarked for Home. With Lawrence relegated to a subordinate role, the old and tried players of the leading parts had all left

the local stage. The setting had also changed, and both Companies now directed their energy to repairing the ravages of war, restoring their trade, and rehabilitating their revenues. We may here note that Lawrence's own Narrative, reproduced in Cambridge's book, comes to an end with the Truce, so that henceforward we are deprived of a source of valuable information. Moreover, now that he was at the seat of government we also lack the hitherto copious light derived from his frequent letters from "up the country" to the Council at Madras; and one must needs try to infer much that was previously made explicit.

During the year 1755 we find the principal *dramatis personae* in the following positions: George (later Lord) Pigot as Governor; John Adlercron as Commander-in-Chief; but not a Member of Council: and Stringer Lawrence usually at Madras, sitting in Council as Second to the Governor, but once absent on a special mission. Less prominent parts, so far as we are concerned, were assigned to Alexander Heron, up country on a series of expeditions and forays which were soon to lead him into grave trouble: Samuel Bagshaw commanding the 39th Foot as lieutenant-colonel, at Cuddalore: and Kilpatrick, first at Trichinopoly, then with the Nawab. But the English and the French were ill at ease during the twelve month, while their allies were engaged in their usual disputes. There was a general feeling that though war was not on the threshold it was not by any means far out of sight.

Biddulph in his life of Lawrence dismisses the years 1755 and 1756 in a single line: "For two years his work was chiefly administrative." Though we shall confine ourselves to matters in which Lawrence was directly interested, his activities during this period assuredly deserve more extended notice than Biddulph gave them, for they form part of the foundations on which he erected the regular Indian Army.

We discern Lawrence's hand in a reform made by the Council in January. Hitherto it seems that columns and detachments had been made up to the required strength by posting to them men from any company or body of troops that lay handy, with the result that the soldiers were mixed up together regardless of their proper units, and did not get to know their officers as they should. It was also difficult to keep track of individual soldiers in the resulting confusion. It was therefore decided that "the Captains of every Command shall have Men of their own Company with them"; and the companies of Major Kilpatrick and three captains were

at once assigned to the garrison of Trichinopoly, while the remaining units were to be sorted out or "levell'd" as soon as the army returned to the Coast.¹⁷

Lawrence was much occupied with the general Council business. Some of the matters that took up much of his and their time during the year may be mentioned: relations with the French and the Country Powers, including much arising out of the Truce: Admiral Watson's sea expedition towards Bombay against Angria: affairs around Trichinopoly, causing much correspondence with Kilpatrick and later with his successor there Caillaud: and the resettlement and occupation of territories by the various princes. With Major Heron, too, the Council was constantly exchanging letters. The task allotted to him was to re-establish Nawab Muhammad Ali in his dominions, but Heron's methods soon became highly arbitrary. He over-reached himself and was suspected of peculation, the first sign of the ugly monster of corruption and self-interest which was to become the bane of Bengal. Protracted investigations by the Council culminated in September, when Heron requested Adlercron to put him before a general court-martial. To cut short a story that figures at great length in the records, the trial resulted in Heron's cashiering.¹⁸

Lawrence's only absence from Fort St. George in 1755 was in August, when he and Palk were sent on a mission to represent the Governor and Council at the Nawab's state re-entry into his capital, Arcot. "The Nawab made his publick Entry this Morning in a very splendid manner", they reported from Arcot on 21st August.¹⁹ He and Palk then accompanied the Nawab on his progress to Madras to pay a ceremonial visit to the Governor. "He was received at the Company's Garden House by the President, Rear Admiral Watson, Rear Admiral Pocock, and most of the Gentlemen of the Place. Twenty one Guns were fir'd at the Fort on his Entrance to the Garden House from Whence he was afterwards accompanied as above to the House prepar'd for his Reception near Viparee".²⁰ Thereafter Lawrence was a member of a deputation of councillors who spent much time in trying to arrive at a financial settlement between the Company and the Nawab.

Adlercron was like a volcano which for the most part was quiet but erupted without warning when least expected. He caused constant anxiety to the Council who never knew what he would take it into his head to do next, though they went to some pains to avoid giving him the slightest cause for offence. He for the most part resided at Fort St. David where the 39th Foot were cantoned. In July there was a serious difference of

opinion about a court-martial, and after a very terse letter from the Colonel the Council invited him to come to Madras and talk things over.²¹ Adlercron sent no definite reply, but countered by writing direct to Lawrence requesting him to go over to Fort St. David to attend a Council of War. To this the Madras Council rejoined that, as peace now ruled, the affairs of a council of war could hardly be as pressing as their own important business which required Lawrence's presence at their board in Madras. Adlercron's bluff was thus called, but it cannot have improved his temper;²² especially as a week or so later Lawrence did leave Madras, on the mission to Arcot already described.

On 1st August Captain Polier wrote from his camp just outside the bounds of Fort St. David, where he had recently arrived with the Nawab: "I was greatly surpris'd at my coming to Camp to find from the King's Regiment a Captain's Guard with 100 Men and as the Captain commanding them must have superceded me I immediately waited on Colonel Adlercron to know if it was his Pleasure to remove me from the Command which the Honble. Governor and Council had entrusted me with. He assured me that he had no such Design but what he had done arose purely from a desire he had to show the Nabob the Esteem the English Nation bore him, that he further propos'd not only offering him this Guard but his Regiment to attend him to Arcot. I represented to the Colonel there would be no Occasion as the Force the Honble. Governor and Council had thought proper for the Guard of the Nabob's Person was sufficient, especially as I apprehended very little or no danger. Colonel Adlercron treated me with much Civility but as he persisted to offer the Nabob the above Compliment I went to consult Govr. Starke. We agreed it would be proper I should see the Nabob before the Colonel and acquaint him that as the Honble. Governor and Council had appointed a sufficient Guard for the Security of his Person, in case Colonel Adlercron should offer a Reinforcement I thought it would be better not to accept it, as it must displease the Honble. Governor and Council and create uneasiness among us. I accordingly acquainted the Nabob with this. He gave me his Word he would not accept of any Guard that Colonel Adlercron might offer him. He kept it, for when the Colonel waited on him in the Evening he entirely declined it and would not accept of any, assuring him he thought the Force he had sufficient, upon which Colonel Adlercron immediately withdrew his Guard". The Council recorded that they highly approved of what Polier had done to prevent the Nawab's acceptance of Adlercron's offer, "for the Subsistence of the Regiment in the Field

would not only be a vast additional and useless Expence to the Company, but very probably the Division of Command would breed Disputes hurtful to the Service".²³

Probably Adlercron soon came to know how Polier had circumvented his plan, for a week later, after holding a Council of War consisting of himself and his two regimental subordinates Bagshaw and Lovett, he launched at the officials in Madras a letter accusing them of "preferring the private interest of the Company's troops and servants to justice and every other consideration" and "being of opinion that the King of Great Britain has no authority in or over the Company's Settlements". He virtually revoked the undertaking regarding non-interference which had been given through Bagshaw and declared he would henceforth use his powers to the utmost. The Council therefore decided to draw up a complete memorandum of all their dealings with him since his arrival, and to answer his letter paragraph by paragraph with facts taken from that memorandum;²⁴ but though this document was drafted it was never used, for they eventually decided not to make any reply to Adlercron's letter owing to a "desire of Harmony and of an end to the disagreeable part of the Correspondence".²⁵

Adlercron waited until 30th October before complaining that he had never had a reply to his letter of 8th August, when he found a pretext for adding this complaint to a letter primarily concerned with a different grievance but affording an opportunity to revive his general charges that the Council had ill-used him and had been generally discourteous and un-cooperative.²⁶ It does not appear that this letter met with a reply either; but the Council told London what had passed with the Colonel.

This is the last instance in 1755 that appears in the Council's minutes of serious friction with the Commander-in-Chief; but there was a most curious episode at the end of November, when Bagshaw wrote *direct* to the Council: "I give you this Trouble to represent to You a great Injustice I think I receive, and that an Injury is done to my Honour and Reputation when Troops are sent out on Service under the Command of a Junior Officer....I am the oldest (*i.e.*, the most senior) Officer on this Coast after the Commander-in-Chief, and....I have an undoubted Right to Command any Party or Body of Troops (equal to my Rank) sent out for the Service of the East India Company, where the Commander in Chief does not act himself, and until I am convicted of want of Cour-

age, Capacity and Conduct, I cannot be set aside without the greatest Partiality and Injustice.... I came hither at the hazard of my Life, and I came with Inclination. It is not my Fault I have not endeavour'd to be useful. I have always been and now am ready to go on any Service you shall think for the Honour and Advantage of the East India Company. I desire to be favour'd with an immediate Answer...."

Governor Pigot and his advisers looked on this missive as "quite irregular and out of place", since Adlercron alone was entitled to say how his officers were to be employed, or to receive their complaints. To obviate any charge of interference between Adlercron and his lieutenant-colonel, the Council's reply was strictly formal. But we cannot resist the suspicion that the incident may have been a plot by Adlercron, using Bagshaw as an *agent provocateur*, to manoeuvre them into a false position. If it was, it was a dismal failure.²⁷

Despite all these preoccupations and distractions Lawrence was able to make a major contribution to military administration towards the end of the year, for on 27th November a code of Regulations for the Military, Artillery and Sepoys on the Coast of Coromandel was approved, and shortly distributed to all concerned. The Regulations gave the establishments, and rates of pay and field allowance (*batta*); and included standing orders covering the preparation of pay rolls, the issue of pay, the issue and receipt of military stores, and the promotion of non-commissioned officers. The "English Companies" each consisted of:-

	Pay per diem
1 Captain	10 s.
1 Lieutenant	5 s.
1 Ensign	4 s.
6 Serjeants	1 s. 8d.
6 Corporals	1 s. 2 d.
94 Privates "when they can be completed to that number"	10d.
3 Drummers	1 s. 2 d.

giving a total of 3 officers and 109 rank and file. The Swiss Companies each had 4 officers (i.e., an extra Lieutenant), 6 each of serjeants and corporals, 1 drum major, 2 drummers, 1 fifer, and 120 privates, all with

the same pay as their English comrades. An Artillery Company's establishment was :-

1 Captain	£. 200 per annum
1 First Lieutenant	£. 100
1 Second Lieutenant	£. 90
1 Third Lieutenant	£. 90
6 Serjeants	2s. per diem
6 Corporals	1s. 8d.
30 Bombardiers	1s. 8d.
30 Gunners	1s. 6d.
40 Matrosses	1s.
2 Drummers	1s.

while a Sepoy Company comprised :-

1 Subadar	60 rupees per mensem
4 Jemadars	16 Rs.
8 Havildars	10 Rs.
9 Naiks	8 Rs.
84 Sepoys	6 Rs.
2 Colourmen	Pay not stated, but apparently the same as for sepoy
2 Tomtoms	
1 Trumpeter	
1 Conicoply*	

It seems that serjeants sometimes commanded Sepoy Companies, in which case they received an extra monthly allowance of 3 pagodas. On receiving his book of Regulations, one Captain commented that they were "very good and very necessary".²³

*An accountant.

NOTES AND REFERENCES

- (1) FSGMC, 9 Sept. 1754
 - (2) *Ibid.*,
 - (3) *Ibid.*, 12 Sept. 1754
 - (4) *Ibid.*, 30 Sept. & 1 Oct. 1754
 - (5) *Ibid.*, 28 Sept. 1754
 - (6) *Ibid.*
 - (7) *Ibid.*, 15 Oct. 1754
 - (8) *Ibid.*
 - (9) *Ibid.*, 21 Oct. 1754
 - (10) *Ibid.*, 31 Oct. 1754
 - (11) *Calendar of Madras Dispatches 1744-1755*, pp. 227-228.
 - (12) *Ibid.*, pp. 229-232.
 - (13) *Ibid.*, p. 251.
 - (14) FSGMC, 3 Dec. 1754
 - (15) *Ibid.*, 16 Dec. 1754
 - (16) *Ibid.*, 9 Dec. 1754
 - (17) *Ibid.*, 15 Jan. 1755
 - (18) A useful account of Heron's proceedings is in *Cambridge*, pp. 83-86. After he was cashiered, the Council were about to sue him in the Mayor's Court for monies he had misapplied, when he fled to Pondicherry, in February 1756; see Love's *Vestiges of Old Madras*, II. 476.
 - (19) FSGMC, 25 Aug. 1755.
 - (20) *Ibid.*, 30 Aug. 1755.
 - (21) *Ibid.*, 2, 12, 17, & 21 July 1755.
 - (22) *Ibid.*, 27 & 30 July 1755.
 - (23) *Ibid.*, 8 Aug. 1755.
 - (24) *Ibid.*, 13 Aug. 1755.
 - (25) *Ibid.*, 3 Nov. 1755.
 - (26) *Ibid.*
 - (27) *Ibid.*, 27 Nov. 1755.
 - (28) *Ibid.*, 17 Dec. 1755.
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REVIEWS

1 ARMoured DIVISION IN OPERATION "POLO"

MAJOR-GENERAL J.N. CHAUDHURI, O.B.E.

The author is to be congratulated on producing a short interesting book of 74 pages and useful appendices. The book is well written with clever humorous touches, always somewhat difficult in an account of this description. It is nicely balanced in twelve chapters; the first five dealing with preliminaries, the next five with operations and the last two with surrender arrangements and lessons. The photographs would be better if they were more sharply defined. The author states that the book is meant primarily for personnel of 1 Armoured Division, but it is of value to all military students, especially to those likely to carry out similar operations in the future, and will assist in the compilation of a history of the Indian Army.

Comd 1 Armd Div was faced with the problems usual in such a situation: dispersion desired to restore confidence and concentration for training and the main thrust. These conflicting requirements were well related and his insistence on thorough training paid handsome dividends. With attractive modesty he states that the Divisional Commander particularly required training.

It is well brought out that in such operations skilled junior leaders, who are prepared to accept responsibility, play a great part. Detachments at a distance, encircling movements and dealing with "incidents" call for leaders who must be prepared to act on their own in their commander's best interests without reference to higher authority. Such leaders were forthcoming in this action.

As so often happens a quicker concentration was called for than planned. The wise commander is prepared for this and it is interesting to note how the required speed was achieved in this case. The appointment of movement group commanders had a great deal to do with it.

Information regarding the theatre of operations does not seem to have been as good as it should have been. An "I" cover must be organised

in anticipation of such activities and information from all sources—records C.I.D., police, local inhabitants, military—should be fed to one expert authority who can give the commander a carefully reasoned appreciation and be in a position to answer questions satisfactorily. A particularly interesting paragraph is General Chaudhuri's assessment of the character of his opposing commander; most important but sometimes not given sufficient attention. The value of the intercept service is proved and one should always be available to an independent command of this nature.

The grouping of the force is clever and was obviously sound under those particular circumstances. It is interesting to note to what extent administration dictated this grouping, especially in regard to the reduction of vehicles. Such reduction will usually be necessary.

The plan illustrates three things which are always desirable: relieving the fighting commander of responsibility for the tail, the Sholapur Independent Sub Area; a good start, the co-operation of three forces in a really heavy assault on Naldrug; deception, in drilling the enemy to tank noises and possible alternative objectives. Agreement to the plan at all levels was achieved owing to the time available and the understanding of the commanders concerned as to how important this is.

It is always interesting to study what happens when things go wrong. Local guides were found unreliable and the wireless to 7 Bde failed in the Naldrug battle. All were, however, in their commander's mind, knew what to do, and were enthusiastic about the operation. No one was worried and all went well. Again, when the direct road to Bidar was found impassable, no fuss or worry: a tidy change of plan, troops rested while commanders appreciated, and on to Zahirabad with real strength.

It will be noticed that the enemy suffered very heavy casualties, compared with those of 1 Armd Div. In all such operations if really heavy casualties can be inflicted in the opening stages, it will probably result in a collapse, and a less number of casualties in the long run. This might have been mentioned, as it was probably true in this case. Without such a comment, those less familiar with such operations may be inclined to think that more than minimum force was used or that it was a walk-over.

As is so often the case, more subtle work lies ahead after a surrender. The exemplary character of the troops during operations eased this sub-

sequent task, and only a very versatile commander could have taken on the duties of Military Governor with such apparent ease. Senior officers must be prepared for such tasks, as one can see that General Chaudhuri obviously was, if one reads carefully his orders immediately after the surrender.

The lessons in the last chapter are fairly comprehensive, though possibly some additional ones have been indicated in this review. One lesson, which I was particularly pleased to find included, was that after listing all 1 Armd Div difficulties, it is stated that these apply in no less degree to the enemy.

The author writes in the last chapter: "It is fair to say that even if Hyderabad had put up the strongest resistance of which she was capable, the ultimate result could only have been delayed by two days." This would make a most interesting matter for discussion.

D.R.

Note. This book is at present a restricted publication but is available for sale to officers in the Defence Services. A very limited number of copies are available with AQ, 1 Armd Div, and will be forwarded to purchasers on receipt of Rs. 12/- which will include the cost of postage. (*Ed.*)

THE FRONTIER FORCE RIFLES

Compiled by

BRIGADIER W.E.H. CONDON, O.B.E.

With illustrations and maps

Gale and Polden, 42/-

All those who have served or been associated with the Frontier Force Rifles will read this Regimental History with great pride. Compiled by Brigadier W.E.H. Condon, OBE, (formerly Director of the Inter Services Historical Section at Simla), this volume has been presented as a very readable account of the activities of this famous Piffer Regiment from 1849, when the Punjab Frontier Force was formed, to the end of the Second World War.

The History has taken some years in the writing and General Sir Douglas Gracey in his Foreword pays tribute to the four persons who were mainly responsible for its production. The late Colonel Charles Morris started the venture when he was Commanding the Regimental Centre and collected most of the funds. Subsequently Lieutenant-General Sir Bertrand Moberly, as head of a Regimental History Committee, invited Mr. H.G. Rawlinson, late of the Indian Educational Department, to undertake the writing of it. When in June 1950 ill-health prevented Mr. Rawlinson from continuing with the work, Brigadier Condon took it over. It is the latter, however, to whom most of the credit for this excellent publication is due.

The History begins with a very brief account of the early history of the Punjab Frontier Force. The account of the Regiment's activities up to the beginning of the First World War, which covers only some twenty-seven pages of the narrative, could have been given in more detail. The Regiment's share in the engagements of the Indian Mutiny, for instance, deserves a little more space than that allotted by the compiler.

The First and Second World Wars are covered in separate Battalion-wise accounts. It is remarkable to read that during the First World War units of the Regiment served with such distinction in battle-fronts as widely separated as France, Iraq, German East Africa, Palestine and the North West Frontier. During the Second World War the record of the Regiment even surpassed its previous efforts. The five Battalions of the pre-war Regiment expanded to 15 war-time Battalions including a Machine Gun Battalion. The Regiment had a Battalion in every campaign in which the Indian Army served, except in France and Germany. The 4th Bn (Wilde's) has the unique distinction of having formed part of a British Guards Brigade.

The volume contains some excellent maps and illustrations. The Frontispiece of the Colonel-in-Chief, His Majesty King George VI, (from the painting by Dorothy Wilding) is an excellent reproduction. A number of appendices at the end of the book supply the reader with as complete a list of Regimental information as any history could hope to provide. Altogether an admirable publication.

D.K.P.

MIDDLE EAST AND FAR EAST

ALLAN S. WALKER, M.D., CH.M., F.R.A.C.P.

With illustrations and maps
Australian War Memorial, Canberra, 35/-

This, the second of the four volumes in the medical series of the official history of "Australia in the War of 1939-45", surveys the activities of the Australian Medical Services in the Middle East and in Malaya.

Part I deals with the formation of the 6th, 7th, 8th and 9th Divisions of the Australian Imperial Force (A.I.F.) and I Australian Corps; and the medical aspect of the campaigns in Greece, Crete and Syria, in the desert at Bardia, Tobruk, Benghazi and El Alamin and during the retreat in Cyrenaica. The account includes also the period 1919-39, the A.I.F. in the United Kingdom, Australian prisoners of war in Italy and Germany and the situation in Australia.

In Part II the author after referring to events in Australia discusses the work of A.A.M.C. in Netherlands East Indies, Timor, Ambon, New Britain and Malaya, and vividly narrates the story of 'privation, starvation and overwork' in prison and labour camps. The book closes with the account of liberation from captivity.

Like Volume I this contains a lot of material which will interest the military administrator. For example it was observed in Libya and Greece that the best age group for duties in the field appeared to be over twenty-one and under thirty-five. The ADMS of a division observed that the "best officers were under forty, preferably much less, and those who had not been handicapped by experience in the last war (World War I). Age often appeared to be a disadvantage even at Headquarters in rearward and base areas which were not immune from enemy attack". These conclusions will give rise to some comment, for (in the words of General Wavell), "it is impossible really to give exact value to the fire and boldness of youth as against the judgement and experience of riper years; if mature mind still has the capacity to conceive and to absorb new ideas, to withstand unexpected shocks and put into execution bold and unorthodox designs, its superior knowledge and judgement will give the advantage over youth." The conclusions of the ADMS if applied to battalion officers or equivalent, where physical and mental toughness of youth is a quality of vital importance, will possibly be generally acceptable.

It is noteworthy that "even in 1942 there was still evident some of the obsolescent tendency of some combatant officers to brush away medical scientific advice, probably because it is about the only technical subject on which most people have personal views. But this resistance was yielding to pressure of experience".

The importance of hygiene is also well illustrated in various parts of the book. It is not surprising that where hygiene measures were negligible like the labour camps along the Burma-Thailand Railway the death rate was about 25%.

The book is of special interest to members of the medical services. The reader will find some interesting aphorisms like "Do not talk about what you have not got. See what you can do with the things you have got", or "Do not allow spectators, kick them out". The book is very well written and admirably produced with attractive maps.

B.L.R.

JUNGLE LORE

JIM CORBETT

Oxford University Press, Rs. 6/8/-

There are many in the Army today who remember Colonel Corbett. His was the task of lecturing, on jungle craft during World War II, to both our training divisions, 39 Division at Saharanpur and 14 Division at Chindwara. The jungle lore he expounded was profound and, because of the terrain in which they fought, of valuable assistance to officers posted to 14th Army.

"Jungle Lore" is Colonel Corbett's fourth book, the others in the series being "The Man-eaters of Kumaon", "The Man-eating Leopard of Rudraprayag", and "My India". You will appreciate "Jungle Lore" the better if you have read those that have come before. It is in the same reminiscing vein. Khaladunghi, the Bachelor of Powalgarh, the Haldwani road, Robin the springer spaniel, these and others made their first appearance in "The Man-eaters of Kumaon".

The Colonel's style in "Jungle Lore" has not changed and is the same as in his other books, simple, direct and entertaining. As the name implies there is much to be learnt from the book especially for those who love to tread the game paths. In one chapter Colonel Corbett harkens back to cadet days in the Naini Tal Volunteer Rifles and, reading it, one feels that at least in one respect the old method of training was unsurpassed; it did make the young soldier tough.

H.L.F.

A YEAR OF SPACE

ERIC LINKLATER

MacMillan & Co. Ltd., 18/-

In 1951 Mr. Linklater undertook two tasks, one for the Central Office of Information to write a short history of the campaign in Korea, and the second for the British Council to lecture in New Zealand and Ceylon. "A Year of Space" is a journalistic log of his journeys, mostly by air, in fulfilment of his two assignments.

The book tells of people, places and ideas, and it tells it exceedingly well and engagingly, for Mr. Linklater has the gift of turning a sentence to his meaning without doing it violence. The people in its pages are mostly fellow travellers and toilers by the roadside; there are also occasional and revealing glimpses of better known figures, George V, George VI, Field Marshal Wavell, Bernard Fergusson of the Black Watch and the Chindits, and Unni Nayar. Of Unni Nayar, Mr. Linklater mistakenly refers to him as a Maratha, whereas he came from further south, Malabar.

This is a book well worth reading, both for what it says and the manner of saying it. If there is any criticism it is of the author's unusual penchant for beginning a sentence with a dash. The only other criticism is the absence of an index. Mr. Linklater's views on men, matters and places, in such a book, are well worth the trouble of indexing.

H.L.F.

CORRESPONDENCE

HIGHER DEFENCE ORGANISATION

‘ SCRUTATOR ’

The July-October issue of the U.S.I. Journal reproduces a lecture given by Mr. H.M. Patel, in the course of which various aspects of higher defence organisation are touched upon. It is a very comprehensive review by our former Defence Secretary, who carried a heavy load in the Defence Ministry with distinction for many years. Much of the lecture is factual and—coming from such a source—largely authoritative. The lecture also included however certain opinions held by the lecturer which it may be interesting to discuss from the view-point of the Services.

The following comments are offered seriatim on those views—the references are to page numbers of the July-October Journal:—

In the final paragraph on page 138, it is stated that a study of the defence systems in the United Kingdom, Canada and the United States indicates some fundamental principles which should govern defence organisation in India. That is, of course, true ; those countries have had great experience in developing a democratic defence system, and we should think very seriously before departing from the principles which they have adopted. However the interpretation given in the lecture to those principles seems in some instances open to question. For example, the principle is stated that “ the ultimate control must unquestionably be in civilian hands.” That is of course a fundamental principle of democratic control of the defence machine. After reading a few more paragraphs however, one gets the impression that by the expression “ civilian hands ”, the lecturer very largely means “ Civil Servants ”. If that is so, then of course one must join issue. The fighting Services are certainly subordinate to the people of the country in general, through Parliament and the Government, and to the Defence Minister in particular ; but they are not subordinate to the Civil Service in the Defence Ministry any more than the Civil Service is subordinate to the fighting Services. One reads at the bottom of page 139, that the Defence Minister must have expert civilian advice on all matters concerning the Services, and that it is the Ministry (*i.e.* the Civil Servants) which provides this advice. That is not a sound theory (and is

certainly contrary to the principles followed in U.K. and U.S.A.). It is not practicable for Civil Servants—even if they are very able and have spent a long time in the Ministry—to give expert advice on *all* matters concerning the Services. To be an expert on even *one* of the three fighting Services a man has to serve most of his life actually in it. Even with that back-ground it is quite impossible for any one person to be an expert on all three Services. Moreover, expert advice should only be given by those who bear the responsibility if it is accepted. Civilian advice should be limited to matters of finance, law, relations with other authorities, contractual work, etc. In other words, higher officials in the Secretariat act as Secretaries to the Government of India. That is an honourable and responsible position, but they are not defence experts. Expert advice on the general running of the Services, on strategy, training, tactics, equipment and higher administrative matters, can only usefully be given by those who have expert knowledge and direct overall responsibility for each Service, *i.e.*, the Headquarters of the Services, and in the last resort the Cs-in-C.

On page 141 of the lecture, it is suggested (and the view seems to arise from the 'integration' theory held in some quarters in India) that one large Ministry carrying out the day to day business of *all the three Services* is a good thing. Here one must join issue again. It is a fundamental principle of defence organisation in U.K. and U.S.A. that the Defence Ministry is only concerned with the highest *policy* and co-ordination; *execution* is left to the Service Headquarters who have special knowledge and are directly responsible. Over-centralisation with lack of drive, and undue delay are the result of failure to follow that principle. While it was no doubt expedient in 1947 that the organisation should be set up as it was, that organisation is—with the development of the Services—no longer the best. Decentralisation is essential. As a first step, many now hold the view that each of the Deputy Defence Ministers should be given *responsibility* for one of the three Services and should have his proportion of Secretarial and Finance Staff; with responsibility and special knowledge should come enthusiasm and drive. He would be answerable to Parliament for the efficiency of his Service and for his expenditure—within the amounts voted. Fears of "separatism" are really quite groundless; the highest policy and co-ordination would continue to be given by the Defence Minister. There is no "separatism" in the three Services in U.K.; in fact there is extremely close co-operation and comradeship. Moreover, the Service and Civil sides get close together and work happily in co-operation at each of the Service Ministries.

At the bottom of the same page, 141, it is stated that the Chiefs of Staff Committee is subordinate to the Defence Minister's Committee. Having previously only challenged theories and opinions in the lecture, here one must challenge a fact. The Chiefs of Staff are not subordinate to the Defence Minister's Committee, for they are all full members of that Committee, the other members of which are the Financial Adviser and the Defence Secretary who are certainly not their superiors. It is to the Defence Minister himself that they are subordinate. Since the lecturer himself pays tribute to the fundamental principles followed in U.K., it should also be remembered—when reading on to page 142—that in U.K. the Chiefs of Staff can report direct to the Defence Committee of the Cabinet, and not even the Minister of Defence is empowered to suppress their views or prevent them from going forward in the precise words which the Chiefs of Staff used. The Cabinet wish to have the undiluted views of the Chiefs of Staff—though of course the Defence Minister can say what he likes on his forwarding note. Needless to say the Chiefs of Staff very rarely make such submissions against the wish of the Minister—for heads may roll in the dust!—but constitutionally they can. Such submissions can of course include higher administrative matters, for each of the Chiefs of Staff has overall responsibility for the efficiency of his Service.

There is one final point—on page 144—which deserves comment, but which is somewhat controversial and will consequently not be enlarged upon here. A reference is made on that page to Inter-Service Organisations. There is a great deal to be said for and against Inter-Service Organisations (*e.g.* Engineering and Medical). When such an organisation of Service officers and men is set up however, it is essential that it remains under the Service Headquarters—*i.e.* in the last resort, under the Chiefs of Staff—since they are *responsible* for the efficiency of each of their Services and must therefore have *control* of its integral and essential parts. In short the control of an Inter-Service Organisation must not be taken away from the Services and placed under the Civil Secretariat in the Defence Ministry.

SECRETARY'S NOTES

Membership

Our present annual subscription of Rs. 10 has remained stationary since 1921 in spite of rising costs all round during the last thirty-three years. The subscription is in fact nominal when we compare the vast differences in prices between the pre-war and post-war years. We can keep it at this nominal level only if we have a minimum total membership of five thousand. At present we are short of this figure by two thousand.

As a result of our membership drive last year 308 new members joined the Institution. This was encouraging, but we must set a bigger target for this year. It should be possible to enrol at least 500 new members in the current year if all our members make a joint effort. Each member can assist in this campaign by enrolling at least one new member.

All officers of the armed forces in India and other Commonwealth countries and civilian gazetted officials in India are eligible for membership. As usual enrolment and bankers' order forms are given elsewhere in this issue.

Annual Council Meeting

At the annual meeting of the Council held in New Delhi on 7th December 1953, Air Vice-Marshal A.M. Engineer, DFC, was elected President.

The Council elected the following to serve on the Executive Committee:—Major-General J.N. Chaudhuri (Chairman), Commodore G.A. French, RN, Major-General Th. Mahadeo Singh, DSO, Brigadier R. B. Chopra, Air Commodore P.C. Lal, DFC.

Corresponding Members

The Executive Committee has decided to have Corresponding Members (*i.e.* liaison officers to forward the objects of the Institution) at the following Establishments /Commands (i) Defence Services Staff College (ii) National Defence Academy (iii) Flag Officer Flotillas Indian Fleet (iv) Commodore-in-Charge, Bombay (v) Commodore-in-Charge, Cochin (vi) Naval Officer-in-Charge, Vizagapatam (vii) H.Q., Training Command IAF (viii) No. 1 Air Force Academy (ix) No. 2 Air Force Academy.

The names of Corresponding Members will be published in the Journal as and when they are appointed. Up to now we have

1. Commander C.E. McGready, I.N. I.N.S. CIRCARS, Naval Base, Vizagapatam.
2. Lieut. Colonel G.H. Simoes Defence Services Staff College.
3. Captain (S) K.L.K. Row, I.N. Flag Officer Flotillas Indian Fleet.

Gold Medal Essay Competition 1953

No medal was awarded for the year. Four entries were received. On the recommendation of the judges the Council awarded cash prizes as follows:—

Winner	.. Major G.S. Wakankar, ASC	Rs. 200
Runner-up	.. Lt.-Comdr. N.S. Tyabji, I.N.	Rs. 100

The three judges were Brigadier P.P. Kumaramangalam, DSO, Instructor Captain E.F.R. Byng, RN, Air Commodore P.C. Lal, DFC.

Lectures

Between October and December 1953 the following lectures were held in New Delhi:—

1. "China", by Mr. T.N. Kaul, I.C.S. 21st October 1953
2. "Naval Aviation", by Captain J.E. Smallwood R.N. 3rd November 1953
3. "Morale", by Major-General W.D.A. Lentaigne, CB, CBE, DSO. 28th November 1953
4. "Lighter Africa"—(Stories from the Eritrean-Abyssinian Campaign 1940-41) by Lieut.-General Sir Dudley Russell, KBE, CB, DSO, MC. 3rd December 1953
5. "Oil", by Mr. W.E.V. Abraham, CBE. 22nd December 1953

In all fourteen lectures were held in 1953. They were as a rule followed by discussion in which members participated. Some of the lectures were off the record. Others have been or are being published in the Journal.

Members are reminded that those who are resident in, posted to, or visiting the Capital will please keep in touch with the U.S.I. office (Tel. 41/145) for lecture notices and invitations.

Addresses

Members are again reminded that changes of address are to be notified immediately to this office. When journals and correspondence are returned undelivered by the post office we have to write to the Service headquarters concerned and it takes some time before we get the new addresses.

There have also been a few cases of overseas members whose addresses are not up to date in our records. Journals sent to them have been returned undelivered by the post office with the remark "gone away" or "address not known". We are giving below their names and last known addresses in case they or any of our readers can furnish us with their present addresses.

1. Lieut. Colonel Abdur Rahim Khan,
C/o Ministry of Foreign Affairs
Commonwealth Relations & States,
Government of Pakistan,
Karachi. (Pakistan)
2. Lieut. Colonel H.F.T. Aldous, R.E.,
Gedding Hall,
Gedding, Suffolk, England.
3. Captain P.B. Bagnall,
Farley Grange,
Westerham, Kent, England.
4. Colonel H.L. Barstow,
C/o Lloyds Bank, Ltd.,
6 Pall Mall,
London, S.W.I., England.
5. Major J.R. Bowring, M.C.,
C/o Lloyds Bank, Ltd.,
6 Pall Mall,
London, S.W.I., England.
6. Colonel A.H. Burn, CIE, OBE,
C/o Messrs. Lloyds Bank, Ltd.,
6 Pall Mall,
London, S.W.I., England.

7. Captain N.A. Collier,
11 Ramsay Garden,
Edinburgh, 1, Scotland.
8. Lieut. Colonel A.C. Cottell,
C/o Grindlays Bank, Ltd.,
54 Parliament Street,
London, S.W.I., England.
9. A. Forbes, Esq.,
Canford Chambers,
St. Peters Road,
Bournemouth, England.
10. Major J.M.R. Ford, OBE, MC,
C/o Lloyds Bank, Ltd.,
6 Pall Mall,
London, S.W.I., England.
11. Mr. Gault Mac Gowan,
New York Sun Bureau,
65 Ziegelhauser Landstrasse,
Heidelberg, Germany.
12. Brigadier J.H. Gradidge, OBE,
Bronavon,
Old Hunstanton,
Norfolk, England.
13. Sir Theodore E. Gregory, Kt., D.Sc.,
C/o Midland Bank, Ltd.,
Bedford Row,
London, W.C. 6, England.
14. Major A.K. Grieve, M.C.,
102 Marine Avenue,
Monkseafow, Northumberland, England.
15. Lieut. Colonel C.D. Hinds,
Ruislip, Middlesex, U.K.
16. Captain R.E.J. Holmes, M.C.,
C/o Grindlays Bank, Ltd.,
54 Parliament Street,
London, S.W.I., England.

17. Major-General I.P.T. Hughes, MC,
Summer Court,
Farnham, Surrey, England.
18. Group Captain J.L.M.deC. Hughes-Chamberlain,
38 St. Margarets Road,
Oxford, England.
19. Major K.M. Hutchison,
C/o Lloyds Bank, Ltd.,
6 Pall Mall,
London, S.W.I., England.
20. Colonel W. Johnson Cole, OBE, AMIME,
C/o Lloyds Bank, Ltd.,
6 Pall Mall,
London, S.W.I., England.
21. Lieut. Colonel Karim Dad,
C/o Lloyds Bank, Ltd.,
Rawalpindi. (Pakistan)
22. Major H.L.L. Lansberi-Browne,
C/o The War Office,
London, S.W.I., England.
23. Lieut. Colonel A. Latham, DSO,
Yardley, Walkford Road,
Highcliffe,
Christchurch Hants, England.
24. Colonel L.N. Malan, OBE,
C/o Lloyds Bank, Ltd.,
6 Pall Mall,
London, S.W.I., England.
25. Major E.W.C. Noel, CIE, DSO,
C/o Lloyds Bank, Ltd.,
6 Pall Mall
London, S.W.I., England.
26. Major R.J.N. Norris,
Milton House,
Milton Abbas, Nr. Blandford,
Dorset, England,

27. Lieut. Colonel J.E.J. Perkins, R. Sigs.,
Hamilton House,
Burton Hill,
Melton Mowbray,
Leicestershire, U.K.
28. N.C. Pring, Esq.,
C/o Lloyds Bank, Ltd.,
6 Pall Mall,
London, S.W.I., England.
29. 362845 Lieut. A. Rose,
The Black Watch (Royal Highland Regiment),
48, Eaton Square,
London, S.W.I., England.
30. Lieut. Colonel W.L.S. Stewart-Meiklejohn,
46, South Street,
St. Andrews, Fife, England.
31. Lieut. Colonel J.S. Vickers, DSO,
C/o 1/10 Gurkha Rifles,
Kulong, Johore Baru, Malaya.
32. Colonel P. Young, DSO, MC,
The End House,
Sandy Pay,
Cobham, Surrey, England.
33. Major W.R.G.deW. Warren,
The Border Regiment,
C/o War Office,
London, S.W.I., England.

Subscriptions

Subscriptions can be paid to the current account of the Institution in Grindlays Bank, Ltd., New Delhi (at the rate of Rs. 10 per year), Grindlays Bank, Ltd., Bunder Road, Karachi (Rs. 7-Pak.) or Lloyds Bank, Ltd., 6 Pall Mall, London, S.W.I. (15 sh.).

New Members

From 16th September to 31st December 1953 the following members joined the Institution:—

ANAND, Major D.R., Hodson's Horse.

ANAND, Lieut.-Colonel R.L., Engineers.

- ANANTHANARAYANAN, Major M.R., E.M.E. (T.A.)
BALLANCE, Rear-Admiral F.A., C.B., D.S.O., R.N.
BASU, Major B.N., A.S.C.
BHUSHAN, Commander (E) C., I.N.
BRIJ CHANDRA, Major R.V.F.C.
BYNG, Instructor Captain E.F.R., R.N.
CHIMAN SINGH, Captain K., 4 Gorkhas.
CHOPRA, Colonel N.N.
CHOPRA, Captain U.C., A.O.C.
DE ALMEIDA, Lieut.-Commander T.E., I.N.
DUBEY, 2/Lieut. G.D., E.M.E. (T.A.)
FYZEE Esq., A.A.A., M.A., (Cantab), Bar-at-Law.
GHANSHYAM SINGH, 2/Lieut. K.S., 101 Infantry Battalion (T.A.).
GURJIT SINGH RANDHAWA, Captain, The Sikh Regiment.
INDRAJIT SEN, Lieutenant, Signals (T.A.).
JAGGAROW, 2/Lieut. A.V.N., Artillery (T.A.).
JAGJIT SINGH, Captain, Artillery.
*JOGINDER SINGH, Lieutenant, A.O.C.
JOHRI, Lieutenant M.M., I.N.
KAR, Major A.L., I.W.T. Group, (T.A.)
KARBHARI, Lieut.-Commander D.K., I.N.
KARTAR SINGH, Lieut.-Colonel.
KASHMIR CHAND, Captain, The Sikh Regiment.
KRISHNAMOORTHY, Major M.S., Signals.
KULDIP SINGH, 2/Lieut., Engineers.
*KUNDAN SINGH HUNDAL, Major, 16 Light Cavalry.
LATIF, Wing Commander I.H., I.A.F.
MATTEA, Lieutenant J.R.N., I.N.
MALANI, Major J.G.S., Engineers.
MENON, Lieut.-Commander M.S., I.N.
MODY, Commander J.D., I.N.
MULLA, Lieut.-Commander (S) C.N., I.N.
*NAHAR SINGH, Captain, Signals.
NAHAR SINGH TANWAR, 2/Lieut., 11 Gorkha Rifles.
NAIR, Lieut.-Commander K.P., I.N.
NARAYAN, Lieutenant (S) K.K., I.N.
NAZARETH, Lieut.-Commander (S) F., I.N.
OBHEROI, 2/Lieut. J.L., A.S.C. (T.A.).

* Life Members.

- PARDAMAN SINGH SINDHU, Lieut., Armoured Corps (T.A.).
 *PATHANIA, Brigadier A.S., M.V.C., M.C.
 PAUL, Captain B.C., Artillery.
 PERRY, Brigadier R.H.
 PINTO, Group Captain E.W., I.A.F.
 *PREM SINGH GREWAL, Lieutenant, A.O.C.
 PRIT PAL SINGH, Lieut., Armoured Corps (T.A.).
 PRASAD, 2/Lieut. V.H.M., A.O.C.
 RAJAN, Captain R.A. Signals.
 RAJ BEHARI LAL, Captain, 7 Light Cavalry.
 RANDHAWA, Lieut.-Commander J.S., I.N.
 RANVIR SINGH MALIK, Lieut., Armoured Corps (T.A.).
 ROZARIO, Captain P., I.W.T. Group (T.A.).
 SACHDEV, Lieutenant (S) V.D., I.N.
 SARWAN SINGH, Captain, Engineers.
 SEN GUPTA, Squadron Leader N.K., I.A.F.
 SEN GUPTA, 2/Lieut. R.K., 9 Gorkha Rifles.
 SENGUPTA, Captain S., A.S.C. (T.A.).
 SHARMA, Captain A.N., The Assam Regiment.
 SMALLWOOD, Captain J.E., R.N.
 SOPHER, Commander H., I.N.
 STIFFLE, Major H.O., E.M.E. (T.A.).
 TANEJA, Esq., S.S., M.A., L.L.B.
 *THAKUR, Major P.S., Engineers.
 UMRAO SINGH, Captain, E.M.E. (T.A.).
 UMRAO SINGH, Lieut.-Colonel, A.O.C.
 *VARMA, Major M.R.P., The Dogra Regiment.
 VELU, Lieut.-Colonel N.R., A.M.C.
 VERMA, 2/Lieut. S., Engineers.
 VISHWANATH, Esq., P.K.
 WARNER, Captain (L) N.E., I.N.
 WARRIER, Captain P.U.K., A.O.C.
 WILLIAMS, Lieutenant E.H., E.M.E. (T.A.).

SUBSCRIBING MEMBERS

Six Officers' Messes and Units were enrolled as subscribing members during this period.

* Life Members.

ESSAY COMPETITION

GOLD MEDAL PRIZE ESSAY COMPETITION, 1954

The Council of the Institution has selected the following subject for the Gold Medal Essay Competition for 1954:—

“The maintenance of a strong, healthy fighting spirit and all this term implies is essential amongst all ranks of the Armed Forces. It is natural, however, that the means adopted to achieve this end should vary with each Service.

It is often stated nowadays that many of the time-honoured methods by which this fighting spirit has been inculcated in the past are out of date in the context of modern warfare and in the changed conditions under which our Armed Forces are now required to serve.

What are your views on the above statement and what modifications, if any, do you suggest in the old methods of fostering a virile fighting spirit in India's Armed Forces ? ”

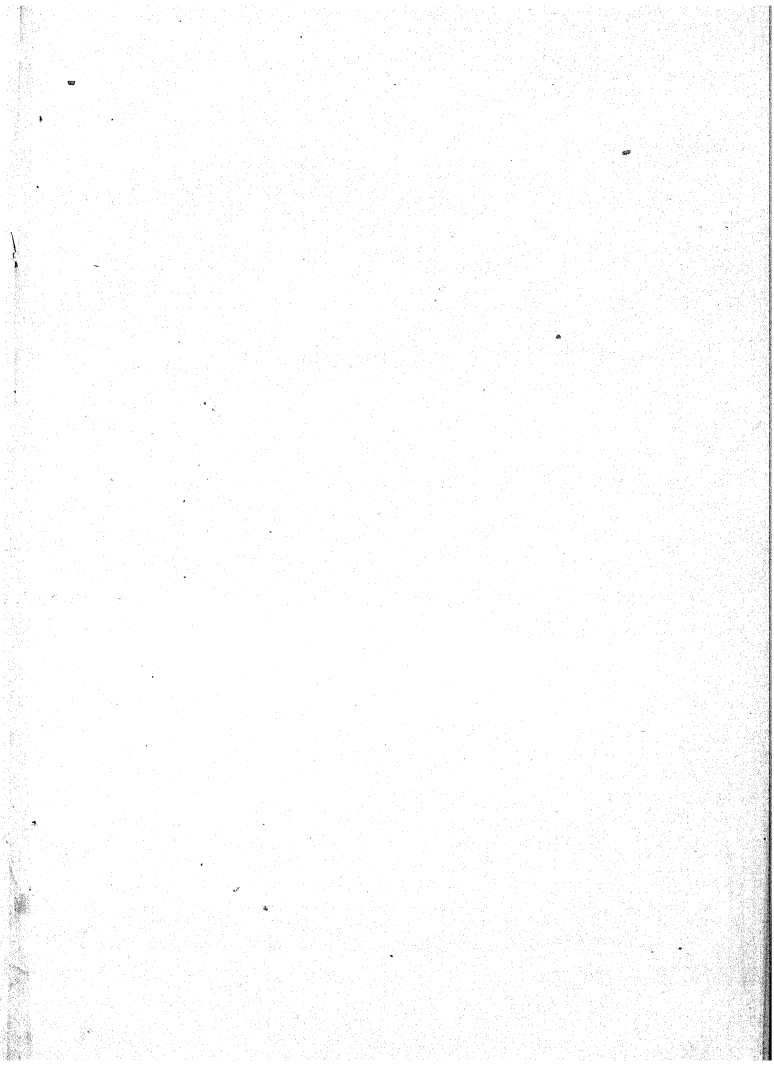
Entries are invited from all Commissioned Officers of the Armed Forces of India, the United Kingdom and other Commonwealth countries, officers of the Territorial Army and the Senior Division of the National Cadet Corps and gazetted officers of the Civil Administration in India. They should be typewritten (double spacing), submitted in triplicate and be received by the Secretary, United Service Institution of India, Kashmir House, New Delhi, on or before 1st July 1954.

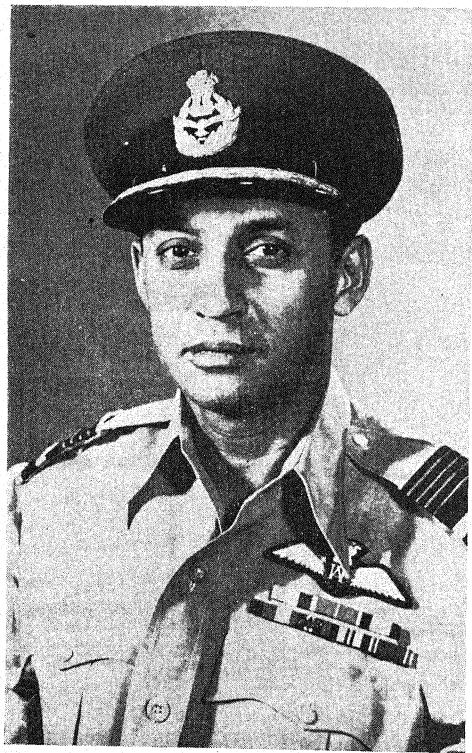
Entries will be strictly anonymous. Each essay must have a motto at the top instead of the author's name and must be accompanied by a sealed envelope with the motto outside and with the name and address of the competitor inside.

Essays may vary in length between 4,000 and 8,000 words. Should any authority be quoted in the essay, the title of the works referred to should be given.

Three judges chosen by the Council will adjudicate. They may recommend the Gold Medal to the winner and Rs. 200 to the runner-up, or money prizes not exceeding Rs. 700, and will submit their decision to the Council. The name of the successful candidate will be published in the October 1954 issue of the USI Journal.

Copyright of all essays submitted will be reserved by the Council of the United Service Institution of India.





AIR MARSHAL S. MUKERJEE
COMMANDER-IN-CHIEF, INDIAN AIR FORCE.

The Journal of the United Service Institution of India

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APRIL 1954

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The views expressed in this Journal are in no sense official, and the opinions of contributors in their published articles are not necessarily those of the Council of the Institution

EDITORIAL NOTES

The I.A.F. Comes of Age

On the first of April 1954, which marked the 21st anniversary of the I.A.F., Air Marshal S. Mukerjee was appointed the first Indian Commander-in-Chief of the Service. Also marking the occasion, the President's Colour was presented to the IAF at a formal ceremony. On his taking over, the new C-in-C paid a handsome tribute to the work of his predecessors, the first three Commanders-in-Chief who were loaned by the R.A.F. It is a matter of gratification for the Journal to record this historic event and to welcome Air Marshal Mukerjee who has been actively associated with the Council of the U.S.I. for a number of years.

Air Marshal G.E. Gibbs, CIE, CBE, MC, on his relinquishing command, has in recognition of his services been appointed an honorary Air Marshal of the I.A.F. He will thus have a lasting link with the Service which has benefited greatly by his experience and guidance. Our good wishes to the retiring C-in-C.

Those who had the privilege of witnessing the impressive air display and fire-power demonstration at Tilpat, near Delhi, on 28th March, can have no doubt left in their minds of the efficiency and growing importance of this young Service which has now officially "come of age".

Global Defence Pacts

Recent developments in the strategic manoeuvres of the Western bloc have brought the chain of defence pacts nearer to Indian shores. Starting with NATO in Europe and the yet nebulous ANZUS Pact in the Pacific, the Western nations under the leadership of the U.S.A. are now setting about filling in the gaps in their global chain surrounding Communist controlled areas.

In 1950, the plan for a Middle East Defence Organisation prepared jointly by Britain and America was not acceptable to the Arab League, although certain states, particularly Lebanon and Jordan, had individually declared themselves favourable to it. Failing to work up sufficient enthusiasm amongst the Arab States, the Western Powers abandoned the idea of MEDO, and instead extended NATO to include Greece and Turkey. Thus, as a stop-gap measure, they replaced MEDO by an eastern wing of NATO. This however still left a large gap in the Middle East.

With the recent inclusion of Pakistan in the defence chain, and the reported prospects as a consequence of Lebanon, Jordan and Iraq also joining in, attempts continue to narrow the gap.

For some time past there has been talk of a SEATO in South East Asia on the lines of the NATO. This has now been precipitated by the French military reverses in the fighting which has again flared up in Indo-China. The Colombo Conference of the five South-East Asian Prime Ministers has on the other hand called for an immediate cease-fire in Indo-China, and direct negotiations between the parties principally concerned, based on the complete independence of Indo-China. The success of the Geneva Conference which is now trying to solve the Indo-China problem will largely depend on the acceptance of this line of approach.

Thermonuclear Warfare

Far greater than the controversy which was raised over the employment of chemical warfare, more intense than the speculations over the future of warfare in an "atomic" age, is the apprehension and sense of bewilderment at the news of the diabolical might of the Thermonuclear or Hydrogen Bomb. Who could have imagined even in their wildest fancies that soon a bomb would be exploded in which even the mighty atom bomb could only serve the purpose of a humble detonator? The strength and power of devastation of this bomb have altered the strategy of global war more radically than is at first discernible.

The atom bomb was considered a potential danger to built-up areas : the wide open spaces of the earth were considered comparatively immune from the ravages of this bomb. In other words, whereas the atom bomb was a potential threat to industrially advanced nations which had large concentrations of men and men's settlements in confined areas, agricultural countries were not considered a worth-while target. The area of destruction of a hydrogen bomb however is so great that it could be dropped even in the "wide open spaces" with considerable effect. Countries such as Russia or China, where large tracts of sparsely populated agricultural areas had given them comparative immunity from the atom bomb, can no longer boast of this advantage. A hydrogen bomb could have definite effect if dropped in Siberia or Central China—even if not as devastatingly effective as against London or New York.

Territorial Army Enrolment

Sometime in March, while answering a question in Parliament on the steps being taken to make up the strength of the Territorial Army, the Minister for Defence Organisation indicated that it was proposed to make enrolment in the T.A. compulsory for Government servants and employees of public utility concerns, in certain age groups. The draft Bill for the proposed legislation was subsequently considered and agreed to by the Central Advisory Committee for the Territorial Army.

-----This step has been necessitated by the shortage of techni-

cal personnel in the Urban units. It has been stated that the age groups liable to be called up for enrolment will be between 20 and 40 years. Since the call up will be selective, only a small fraction of the total number of Central and States Government servants and employees of public utility concerns will be actually affected.

What shape legislation will ultimately take, it is too early to say. But essentially the measure will be limited to imposing liability for service in the Territorial Army on certain specific categories of personnel, as and when they are required.

Two copies are required of all articles sent to the Editor. These should be typewritten with double-spacing, and on one side of the paper.

INDIA AND HER NEIGHBOURS— A GEO-POLITICAL INTERPRETATION

C. S. VENKATACHAR, I.C.S.

Lecture on Tuesday 2nd February, 1954

[With Air Commodore P.C. Lal, DFC, in the Chair]

THE CHAIRMAN: Many of you have already had the privilege of hearing Mr. Venkatachar, who spoke to us last year on the influence of Sea Power—particularly in the Indian Ocean area. He is inaugurating this year's series of lectures by giving us a talk on "India and Her Neighbours—A Geo-political Interpretation". This time, he tells me, his main concern will be the influence upon our history of the land masses around us and of the people who inhabit them—matters of much importance to the military thinkers of this particular sub-continent. I hope he will touch upon the air aspect also.

LECTURE GEOPOLITICS

FATES were indeed malevolent to the subject known by the German name of "GEOPOLITIK". For, no simple basic idea has been twisted and perverted from its original thought as Geopolitics. Round the few basic principles of Mackinder have grown a mushroom of false ideas on history and human geography and a spurious literature on the subject of geopolitics. Mackinder is in no way responsible for such intellectual perversities. His perception centred mainly round two ideas. Geography, principally space and the strategical opportunities which physical geography conferred, was the pivot of history of a people or a race and manpower was a measure of physical and national strength of a country—both tremendous realities shifting the balance in the constant duel between land power and sea power in favour of the former. Mackinder also seriously questioned the assumption of the ISLANDERS of the inevitability of sea power, warning them that organisation in space and of manpower by the CONTINENTALS spelt the doom of the Islanders and their sea power, and what was more serious, the destruction of their democratic way of life.

These somewhat novel ideas of Mackinder attracted little attention in western Europe. European political thought was firmly rooted in the principle of the balance of power whose relation to the new perception of the balancing of areas and populations was not quite apparent. The west European mind was not unduly obsessed by vastness of territory or teeming populations. Small European countries in the modern world held dominance and sway over large non-European territories and populations. There seemed little virtue in mere size and large backward populations. The western mind was saturated with the Hellenic-Roman culture. The greatness of the Greeks lay neither in space nor in numbers. Europe did not realise till the end of the Second World War that attack on the West would come from within Europe; the West always looked for counter-attack from the East. It feared more the recovery of the Asian and the other suppressed peoples than the quarrel among the Europeans in Europe.

Mackinder set out his principles from a west European foreground. He had the foresight to see the rivalry between the Teuton and the Slav. Teutonic Germany had no space in the centre of Europe. Russia had a vast hinterland in Asia. If Russia and Germany were to combine they would control a vast area, and as an Islander, Mackinder saw that the sea bases in Western Europe would be threatened by the enormous power of the Continentals. Mackinder's proposition was that the Teuton and the Slav should be separated by interposing between them an effective barrier, a system of three Tier States which are at present included in the Soviet bloc. Hence his emphasis on space and his conception of Heartland. Viewed from the Asian foreground, space and population convey a different meaning. The geo-political idea arises out of fear of aggression and of the exploitation of strategic ideas by unscrupulous organisers of society with a "ways and means" mind whereas at the Asian end the emphasis is on the advancement of civilisation. Indeed, the history of China and India proves that the civilisation of these two countries survived on account of their space and population. Mackinder argued that the attack on the west and on the Mediterranean world was organised from the Heartland though conceding that the attack came from the vacant spaces which had no reservoir of manpower. He, however, did not appreciate the nature of the movement of the nomads in the vacancies of Asia and its relation to the civilisation of India and China. His idea of the nomadic movement was one of aggression on the West.

The argument put forward here is that there are two main traffics in civilisation in the history of the peoples of Europe and Asia. The first and the earlier of them is on land from east to west; the second and the modern one, is mainly on sea from west to east, and the dividing line between these two traffics is the maritime age of Columbus and Vasco da Gama. If one reads the history of a country unrelated to the main stream of the traffic we get a picture, static or in slow motion. No practical idea can be grasped statically. We must come to it with a momentum of thought and that can be done by viewing the history of a country as a part of the main traffic of civilisation.

STATE OF NEIGHBOURS

Let us for a moment treat the whole of Asia, Africa and Europe as one land-area and divide this huge space into four or five zones. India, China and the islands of the Indies can be one zone; let us call it the monsoon land. There is a vast land area from the Pacific to the Baltic. It can be called the Eur-Asiatic land mass. Western Europe, the Mediterranean and the adjacent islands appear from the Asiatic end as a promontory of this vast land mass. We may call it the European coastland. There is a land bridge between Asia and Africa which we may call Arabia or the Fertile Crescent. There is the desert region of the Saharas from the Atlantic to the Nile. Below the Saharas there is a vast continental area.

The Monsoon land and the European coastland occupy only 1/5th of the total area of Asia, Africa and Europe but contain 4/5th of the total world population—a matter of considerable significance. It means the rest of the area is very sparsely populated. This world of ours has vast vacant spaces, with an area of 12 million sq. miles and a population of less than 30 millions, *i.e.*, 1/70th of the population of the globe. It is these vacancies girdling round the earth from Sahara through Arabia to Central Asia and Siberia which constitute a major break in the social continuity of mankind. They have played a great role in the history and development of civilisation of Asia. If you examine a map, you will notice that there is a region of vast forests from the north of Germany through the Arctic region of North Russia extending to the whole of Siberia. Below the southern border of this forested area lies a vast open ground, a luscious prairie and as you move southward, the aridity increases and the grass becomes more sparse. This whole grassland, rich and poor, is called by the geographers as Steppe. The Steppe starts from the centre of Europe, passes through southern Russia and enters Asia through the gateway namely,

the gap between the Ural Mountains and the Caspian Sea. Then the grass zone bends south and continues eastward over the lower level of the Mongolian Upland. It then passes through Altai and Tian Shan Mountains in a narrow gap with the Gobi Desert to the south of it and ends at the less-detached grasslands of a part of Manchuria. This is the longest open passage or corridor in the world. This passage faces India and China and has a system of the mightiest and the most massive barriers in the world. The large population of China and India lies round the eastern and southern slopes of these mighty barriers which include the Himalayas, the Tibetan Plateau, the Karakoram, the Hindukush and the Tian-Shan. These barriers have deflected the traffic of civilisation to India and China and the deflected traffics have found their way into China and India, in each case through two highways. The Mongolian Upland is lower than Tibet and from that area one can reach the Province of Kansu in China and to the great city of Sian and the other directly southward from Lake Baikal to Peking. Similarly in the case of India these massive heights slope down to the Iranian Upland from which two passages lead to India, one through the Kabul Valley and the Khyber Pass to the Plains of the Punjab and the other through the Bolan Gorge to the regions of lower Indus.

This open passage is connected with Sahara through the land bridge of Arabia, part of it known as the Fertile Crescent has tracks of ancient fertility.

CONTACT WITH NEIGHBOURS

With the aid of physical geography we are now in a position to follow the nature of India's contact with her neighbours. Of these, two regions across the seas to the east and the west may be dealt with briefly, reserving a more detailed examination of the regions lying across the Himalayan barriers. From a geographical point of view, the area known as Farther India has much closer contact with India on account of maritime activity following the discovery of the monsoon winds from the earliest times. The Andaman and Nicobar Islands in the Bay of Bengal and the islands of the Indies made voyages more easy and frequent. The absence of islands between the Indian and the Arabian coasts was in comparison with the Bay of Bengal and the Straits of Malacca a handicap to the intrepid mariners of India. Also, the Arabian bridgehead fell under the influence of the Persian and the Mediterranean world. India had lively contact with this area and exchanged goods, commodities and culture forms. There was little active colonisation. In the Far Eastern areas our immediate

neighbours, small in populations, developed with the help of Indian culture a higher level of civilisation. India exercised no form of imperialism over them. At best it may be said that she exercised a form of cultural imperialism but in due course she withdrew her cultural contact, leaving it to the local people to develop their own national form of culture. India made a precious gift of her discovery of alphabets to these areas ; if China had consented to accept this philologic equipment, its written character would have lost its terror. India's services may be underlined by referring to the tenacity of the civilisation of the south-east Asian countries in resisting the inroads of the westerners. It did not go under western impact as did the less-developed civilisation of Mexico and Peru. Lying between China and India, two big giants in size and population, the independence of the South-east Asians was not threatened by any expansionist ambitions of their powerful neighbours. India and China never attempted to have a common frontier at the expense of the people of Farther India.

We may consider three factors of contact between India and her neighbours and they are :—

- (a) Commerce
- (b) Religion.
- (c) Politics.

(a) Commerce

A vast country with monsoon characteristics is bound to develop a peasant society and economy. The Greeks did not know China but Herodotus wrote that of all the countries the ancients knew India had the largest population. Large areas with vast populations generally tend towards a self-sufficient economy. In such an economy, there is no great impulse for external trade except for the exchange of luxury articles. So in the pre-maritime age, commerce and trade were not the prime factors in establishing relations with the neighbours.

(b) Religion

A remarkable feature of Indian civilisation is that religion was never spread outside India with the help of secular arm. It spread through the trade routes. The Mahayana form of Buddhism radiated its powerful influence from the north-west part of India through the Central Asian trade routes to China. The Hinayana form of Buddhism and the higher elements of Hinduism and art were carried across the sea-routes to Farther India and the Indies.

(c) Politics

This term is not used to connote international relations in the modern sense. It would be more appropriate to indicate the phases of India's contact with the outer world. Along the course of the traffic from east to west, we may locate three centres of civilisation, namely the Chinese, the Indian and the Graeco-Roman world. But they were not neighbours in the geographical sense, though they had intermittent contacts. Their neighbours were the nomads and the barbarians. It is to the vacant spaces to which a reference has been made above that we must look for the movements of the nomads. If we people the vacant open passage, call history to our aid and follow their movements, we see then the politics of the three civilised regions in the pre-maritime age was determined by the physical geography of Asia and the historical dynamism in the open corridor.

TRAFFIC IN CIVILISATION

From the dawn of history, the direction of the nomadic movement is from the Steppe to the Sown. In the pre-historic phase of the movement, Indo-European peoples are said to have wandered away from the Steppe to Iran, India, the Aegean and Italy. In the same direction the drift continued in the historical period up to the maritime age. Our knowledge about the nomads is meagre but some material has been gathered by historians to attempt certain conclusions. From European, Chinese and other sources, we know that the nomads under different names were the tenants of the open corridor. There is a stage in which the nomads are peaceful. At any rate, the civilised people do not hear anything about them. As a pastoral people the nomads are mobile and their mobility is due to their taming of the horse in some remote period of antiquity. On the grassy lands they follow the pastures and travel long distances. When they quarrel amongst themselves, sections of them get pushed along the passage. At other times, the ambitious among the nomads weld groups into a strong society and the nomadic region acquires power and movements are set on foot which affect the civilised or settled regions on the borderland of the nomads. On other occasions, a great ruler or leader rises whose actions and conquests spread beyond the confines of the seat of power of the nomads. When their activities are less warlike, the nomads come to agricultural areas as peaceful settlers and get absorbed in the local population. All these factors have come into operation in the movements of the nomads.

It would be convenient to view this traffic from the Chinese end. China always showed awareness of the existence of the nomads on her northern

borders. A major event in the Chinese history is the prolonged duel with the northern barbarians. Chinese chronicles mention of Hiang-Nu who harried the Chinese quite a lot. These are no other than the Huns of European history, and the Hunas of Indian tradition. The Chinese knew also another branch of the nomads, the Yue-Chi who had been displaced by the Hiang-Nu. The Chinese wanted to secure allies against their troublesome northern neighbours and to impress on them the might of China. The Emperor Wu-ti sent an envoy named Chang-Chien who investigated the open corridor up to Farghana. Later on, in the time of the Tang dynasty, the Chinese extended their investigation right up to Merv at the edge of the Iranian Upland. From the 10th to the 12th century, the Chinese were again very much harassed by the barbarians and their capital had to be shifted to the Southern province of China. China took the weight of the attack of the Mongols over Europe by accepting Khubilai Khan as the Emperor of China. These Mongols were overthrown after 90 years. The Manchus, again northern barbarians, displaced the Mings who had succeeded the Mongols.

INDIA AND HER NOMADIC NEIGHBOURS

The effect of these great activities of the Chinese civilisation can be seen in certain events of Indian history. Yue-Chi who had been displaced by Hiang-Nu, pushed the people known as the Sakas who had settled in the corridor somewhere between Iaxartes and Lake Issyk Kul and further displaced the Bactrian Greeks who were ruling in the areas to the north of the Hindu Kush with the result that the displaced Greeks moved on to the Kabul valley and from there figured for some time as the rulers of the West Punjab. The Sakas had to get round Herat and appeared in Baluchistan and Sind and later in Western India as the Indo-Scythians. The nomadic flood carried the stream of the Huns to the farthest extent. The Huns under their great leader Attila made a three-pronged attack of Europe and dealt a fatal blow to the Roman empire. One of the streams of the Huns came to India and their leader was defeated. Another branch of Hiang-nu, called Asena, are referred to in Chinese chronicles as Turks, derived from a word meaning helmet and applied to a helmet-shaped mountain. These Turks figure in the Tang dynasty and Chinese diplomacy was busy in breaking up the solidarity of these barbarians. Though the vast empire of the Turks collapsed by 582 A.D. they again attain prominence in the history of Asia and Europe after the 10th century. Even such fragments of a few facts illumine the transmission of impulses in the corridor traversing vast stretches of territory.

How did India respond to the movement of the nomads? Where the Chinese showed awareness and resorted to military and diplomatic measures, the Indian attitude seems to have been to tackle the problem as it arose, when the entrance to India was pierced and the nomads actually reached Indian territory. India unfortunately did not think dynamically of her frontiers. Physical barriers may be static but the mind of men behind them is not. It is the movement of men and ideas behind the barriers, which matter. In the absence of pasture, the nomads could not wander about aimlessly on the roof of the world. Physical geography to some extent was responsible for Indian complacency. The main direction of the flood of the movement of the nomads was through the Asiatic gateway to Europe. A portion of the stream descended cascade-like over the Iranian Upland into the Fertile Crescent. It was always a very small element which pierced the Hindu Kush and thrust into the Gangetic Valley. Nevertheless the movement had been of sufficient frequency to have roused the consciousness of India. Alexander the Great, established that once the Hindu Kush was crossed, passage to the plains of Punjab was possible unless there was a strong barrier in the north to overthrow the invader. The divide between the north-western plains of Hindustan and the Central Asian regions was the Hindu Kush mountains. A movement to the north of Hindu Kush caused no seismic tremor in the plains of the Punjab. When the southern slope of the Hindu Kush was occupied then the security of the northern Indian plains was definitely threatened. This aspect of Indian Geo-politics is typically illustrated by the activities of Babar. When he was fighting for his patrimony in Farghana, no effect was felt in India. As soon as he crossed the Hindu Kush and consolidated his power in the Kabul valley his mastery over India was easy. Indian civilization dealt with two types of nomadic movement. One is the folk migration of peaceful pastorals who were absorbed in the Hindu fold. The other established its political rule in the southern slopes of the Hindu Kush and penetrated into the Gangetic plain. Before the Islamic period these nomads were either overthrown or they were so thoroughly Indianised like the Yue-Che Kanishka that he is remembered for the evangelization of Buddhism. The later Islamised Turkish marauders who founded their principalities in Delhi soon cut themselves away from the main traffic of civilisation in Central Asia. They became local Indian Rulers and the most illustrious of them, Babar and his descendants attempted to establish a national State in India.

The nomads were people on the march. History wrongly represents them as world conquerors ; they belonged to no State. We may peep through chinks of history into the corridor and obtain one or two glimpses of the nomads. The Chinese pilgrim Hiuen Tsang (referred to in the extract below as Tripitika) made a hazardous journey in the corridor in the seventh century A.D. and when he arrived at Lake Issyk Kul, he met,

“the Khan of the Western Turks, who had come there on a hunting expedition. He wore a green silk gown. His head was bare for a silken filet that bound his forehead and hung down to the ground. Two hundred captains stood round him, all in robes of brocade and with plaited hair. The Turks were fire worshippers. At dinner grape juice was tactfully provided for Tripitika (all Buddhists, both of Mahayana and Hinayana, were forbidden to drink wine), and afterwards the Khan asked for a sermon. Thinking no doubt that a philosophical theme would be too difficult for the Turks to understand, he began with the Ten Commandments. He then went on to speak of Release through Higher Wisdom. The Khan smote his head with his hand, in sign of delighted acceptance of Tripitika's teaching. ‘I should not go to Indika’, he said afterwards (this is what Turks called India). ‘It is very hot there. I should think by the look of you that you would simply melt away’. But when Tripitika rejected his advice, the Khan gave him a young man who had spent some years in China and was a good linguist to accompany him to Afghanistan.”

In 1245 the Pope sent the Franciscan John de Plano Carpini to the court of the Great Khan of the Mongols. Carpini arrived at the imperial camp in time to see that ceremonies at the election of the Great Khan Designate which was held in a huge pavilion of velvet. “The Mongol rulers had not yet begun to live in built houses; they held their courts in great tents and frequently moved camp from one site to another; yet in these camps in the wind-swept wilderness of the steppe the magnates arrayed themselves with a magnificence suitable to warriors who had plundered without restraint from Korea to Silesia. They wore the costliest furs, vair and fox, ermine and sable, with velvets and silver brocades ; they displayed an abundance of gold and gems, not only on themselves but on their tents but also in the trappings of their horses”. Carpini's mission was far from a success and gave little ‘prospect of the spiritual submission of the Tatars to the Apostolic See’.

As long as nomadism existed the gravitational pull was from the steppe to the sown. The nomads had as much right to march into the cultivated

agricultural areas as the Europeans in their transmarine movement to occupy the vacant spaces of the world. The nomads could not have been left in a state of perpetual motion and mobility. They had to be absorbed by the higher civilisation or their societies transformed into civilised ones. India and China, with their ancient civilization and traditional societies, were cast into the role of the tamers and civilisers of the nomads. They were also the shock absorbers for nomadic eruptions. Thus, space and large population far from having an aggressive function were the historic contributors to the advancement of civilization.

This aspect has not received sufficient attention in the west and its inadequate appreciation has led to some misinformed generalizations of Asian history. The nomads did not set out to destroy the superior civilization of Rome. The barbarian attack would in any case gain weight and massiveness in its passage in the corridor the full brunt of which was to be expected at its terminal end. The nomadic attack was not launched by any organised State ; neither was it organised warfare. There was a collision of people leading to the coalescing of cultures. The Huns did not destroy the Roman Empire. The barbarians became part of it. Only the Roman mansion became an apartment house with some new and socially undesirable tenants. The Saracens in less than half a century overran the vacancies from Gibraltar to Transoxiana. It was as though an electric current had been switched off from a power house in Arabia. The European mind for long confused the movement of the nomads with the politics of Islam which aggressively and defiantly confronted western Christendom.

THE REVERSAL OF THE TRAFFIC OF CIVILISATION

The onslaught of the nomads did not lead to the collapse of India and China. Modifications were no doubt made in their internal social structure. The political shape of Europe was altered. The axis of power was shifted from the Mediterranean to the North. Unlike the land masses of China and India, the Mediterranean world was a small area and on its collapse it was politically fragmented. The people inhabiting the European coastland to which the main energies of the European people were now shifted, felt a sense of confinement in a narrow space. For long they had to tolerate the barbarians. They had to struggle to save their nascent Christianity from the attacks of the infidels. The marshy lands of eastern and central Europe had to be drained and populated and here civilised life came later into existence. The Saracens under the banner of Islam stood poised on a strategic arc and held western Christendom at bay, and

the Mongols delivered hammer blows on parts of Europe, the last of the great movements in the corridor. The pressure exerted on the rear, an unknown and uncharted sea in front, the need for trade and commerce and economic expansion—these in one way or another were responsible in releasing the hidden springs of energy of the western people which ultimately led to the extension of the power of the European countries over the seas.

SEA POWER

The highway of traffic changed over from land to sea with the direction reversed from west to east. This traffic fell into two component parts. There was the movement of people across the seas in number larger than that of the nomads. It has been estimated that in the 19th century, nearly 40 million Europeans were transported across the seas principally to the Americas. The other aspect is the organisation of power on the seas. The organisation of sea power in the Indian Ocean was dealt with in a previous lecture given to the Institution in May 1953. Here it is necessary to recapitulate the main premises put forward therein. The Indian Ocean basin is a strategic theatre for the organisation of sea-power. It has exterior and interior aspects. In strategic thinking both the exterior and interior parts are complementary. Two special features of the Indian Ocean are : organisation of land power based on India and its protection from penetration or thrust by a hostile power by way of land from the north or from either sides of the Indian ocean, *i.e.*, from the Middle-East and the African Continent as well as from the Far East. In such a strategic conception the neighbours of India acquired a new meaning. The historical neighbour States of India remained the same as in the premaritime age. Their power to extend their influence to India was non-existent by the 18th century but they became potential threats to the safety of India for reasons which lay altogether outside Asia. Their neighbourhood attained a new significance because of the rivalry of the European powers in Europe. "Except for the sake of Indian Security", asks an English writer, "what interest would Great Britain have had in the Persian Gulf, Tibet or Sinkiang, in all of whose affairs it began to intervene"? This is both perversion and inversion of history. British power had to be extended far beyond the borders of India so as to meet the threat from Europe into the Indian ocean. To protect the maritime road to the ocean India's neighbours had to be defended. The Empire had to be defended not on Indian but upon Britain's needs in the west.

The first 2½ centuries of the contact of the West with Asia was not of much consequence. During this period the rival European powers were contending for the command of the seas and their trading activities had not penetrated deep into the interior of the Asian countries. Sea power was felt after the industrial revolution in Europe. Industrialisation and democracy were both held in an explosive mixture in the container of nationalism. This development in Europe started acutely the rivalries amongst the European States in the 19th century and the duel between the two parts of Europe *i.e.*, the east and the west.

The effect of the continental duel on the seas was not apparent and remained unnoticed throughout the 19th century. There was a particular reason for this. The development of naval power owed its initiative to England and to her favourable position as an island base. English Imperialism accepted the new conception of several contending States. This allowed room for the balancing of different national interests. Balance of power was a major factor in international relations. England's maritime expansion was not based on the glorification of the State power but on individual initiative backed by political power. The exercise of sea power was, however, spectacular. It appeared to be awe-inspiring, all-pervasive and inescapable. It could put on a 'squeeze' over territories ranging from a petty desert Sheikdom to the Celestial Empire. It was ubiquitous. Britain used sea power in a very deft manner in close association with skilled diplomacy. Throughout the 19th century there were many wars in Europe and Asia directly as a result of the rivalries of European States. They were localised and a *cordon sanitaire* drawn so as to prevent conflict from penetrating into the strategic theatres which meant the oceanic regions. This localisation of conflict amongst the European powers gave them added strength for the pursuit of their imperialistic activities in Asia and Africa. The pattern of the duel between sea and land power was accordingly set out; it can be seen in action today. The two world wars were direct attempts to straddle across sea power from land bases. Once such a move is made the present organisation of forces in the world leads immediately to a world-wide conflict.

DUEL BETWEEN EAST AND WEST EUROPE

Britain's sea power enveloped three quarters of the world putting out all conflict on the waters. On the seas there was the effective voice of only one nation. A view from the oceanic side unfolded the nature of the duel on land. The ambition of Napoleon to unite Europe is the starting

point of this duel. Napoleon tried to unite Europe from the west. He told his captors in St. Helena: 'I wanted to unite all peoples into one strong national body. When this was done people could devote themselves to the realisation of their dream. Then there would be no more vicissitudes to fear, for there would be one set of laws, one kind of opinion, one view, one interest—the interest of mankind'. In this enterprise he was baulked by Britain. She cut off France from her maritime communications with her overseas colonies which were seized; defeated the French fleet at the battle of Trafalgar; broke through the stranglehold of Napoleon by defeating him in Egypt; and finally she headed a continental alliance against Napoleon. The three countries of eastern Europe, namely Russia, Austria and Prussia had to be brought in to defeat the attempt of Napoleon to dominate Europe just as in the 20th century the new world had to be brought in to redress the balance in the old.

After the defeat of Napoleon, the duel was taken up by East Europe. Russia had to be found a place in the system of European balance of power if a civil war had to be avoided in Europe. Russia then started probing for strategical positions as a land power. In this career her European ally was Prussia before the latter united Germany into a powerful State. Three times Britain intervened in support of Turkey not for any love for Turkey but to contain Russia and prevent her from extending her power into the strategical theatres of the eastern Mediterranean and the Middle East. Whenever Russia's ambition was thwarted in Europe, her answer was a movement in the vast vacant spaces of Central Asia and of Siberia. That was her answer to the challenge of the maritime powers. This also explains the development of two power lines emanating from Europe, one on land and the other on sea. The latter ran through the front door of the Not-European world. Russian land power, which now penetrated the open corridor—for long the home of the nomads—passed through the back door of the Asian countries. The people at the front door were sensitive to the knocking of the intruder at the back door. All this was not quite so apparent in the 19th century though England on account of her hold on India was always jittery over the movement of the Cossack horsemen on the steppe of Central Asia. The year 1878 marks a further stage in the accentuation of this duel, now taken up with greater strength and earnestness by Germany. Unlike Russia, Germany did not have a vast hinterland of space. She utilised her great skill in organisation, technique of science and industrialisation in building up her man-power for the pursuit of her antagonism towards the West. Bismark's policy was to have a weakened

West and an ineffective Russia so that Germany may exploit her strategic position in the Centre of Europe. She twice attempted to overthrow the West with disastrous results to herself and to the world.

GEOPOLITICS FROM ASIAN PERSPECTIVE

(a) **Duel between Land and Sea Power**

The duel between sea and land power and the duel between East and West Europe are both tremendous realities. In certain areas of the world, sea power has gone over to the defensive. Power organised over a vast land space exerts continuous pressure from its periphery on the marginal areas. As against it sea power can only be selective since it operates on a rimland area which largely lies across the seas. The picture therefore we have is that the contests of the 19th century continue very much in the same form with the rivalries accentuated ; pressure exercised with greater aggressiveness and the strategical ambitions pursued under the guise of ideological warfare.

History is replete with instances of the attempted outflanking of sea and land power and the lessons of history cannot be ignored. The Persian Xerxes, the Carthaginian Hannibal, the Christian crusaders and the European world conquerors of the 19th and 20th centuries—all attempted to outflank sea power. The Romans in the first and second century A.D. and the Portuguese in the 15th century outflanked land power by the discovery of new trade routes in pursuit of economic power.

(b) **Heartland**

Mackinder's conception of Heartland exercised an alluring influence over the Germans who derived their gospel of living space from it. For the purposes of strategical thinking of Heartland, Mackinder included "the Baltic Sea, the navigable Middle and Lower Danube, the Black Sea, the Asia Minor, Armenia, Persia, Tibet and Mongolia. Within it therefore were Brandenburg-Russia, Austria-Hungary, as well as Russia, a vast triple basis of man-power, which was lacking to the horse-riders of history". This area was not accessible to sea power. It could be organised into a great land fortress which would then make a bid for world power. He feared that from this area, all the sea bases would be occupied and a naval counter-thrust organised against sea power. This would bring about the collapse of America which was only a small island in comparison to the greater world island consisting of the land areas of Europe, Asia and Africa. As against this line of thought, three considerations may be put forward. Firstly, Mackinder thinking in the maritime age, could not have brought

to reckoning the potentialities of air power which he thought was an ally of land power. This is by no means conclusive. He had no pre-vision of the atomic power. We cannot here venture into the relative balance of air power in the hands of either land power or sea power. All that can be said is that it is not the final and decisive ally of land power. Secondly, Mackinder perhaps over-exaggerated the capacity of the landsman to organise naval power if he overran the land areas on the sea margins. Sea power is based on certain national characteristics and long tradition. It is not possible to imagine that any and every people on the land surface would become effective masters of this instrument of power. Thirdly, there is the lesson of the old story of the fight between Goliath and David. Size may be very impressive but the contents of power are not always in proportion to size. Size alone will not confer an absolute superiority. Areas smaller in size may have other attributes, material, moral and spiritual which may tip the balance.

(c) Space

This leads to a further consideration about space. Mackinder drew attention with perspicacity to the existence of the land vacancies. The question of space has to be viewed in relation to his own conception of Heartland. He pointed out very clearly the geographical perspective of Russia in Europe. If a line on the map were to be drawn from Leningrad eastward along the Upper Volga to the great bend of the river at Kazan and then south-east along the Middle Volga to the second great bend at Stalingrad and finally south-east along the lower river Donn to Rosta and the Sea of Azov, we get an area in which live a great majority of the Russians. In the Siberian stretches principally along the railway line there are at least 20 million Russians settled as plowmen. In the various intervening vacancies live some more millions. Our conception of Russia should be in relation to this geographical reality and it should not be unduly distended or magnified by calling in the huge vacancies of Asia. There are other vacancies in the world which also may come into reckoning though not at the present time. Outside the Eur-Asiatic vacancies, there are the spaces of South Africa and South America. They yet await being subdued to agriculture and inhabited with the present density of population of tropical areas such as the Indies. They may sustain in course of time even a thousand million people.

The European perspective must adjust itself to large areas and populations. Its evolution has been through small areas and sparse

populations. For example, the area of the Greek world, that is to say, the area where Greek thought and life were practised was considerably smaller than England. The male adult population of Attica, of which Athens was the Capital, was not more than 45 thousand. This tradition of the Graeco-Roman world was carried on by the city States of Italy. At the end of the medieval period these city States were overshadowed by the rise of the nation States on the Atlantic Seaboard. As Toynbee has recently pointed out these European States have now been overshadowed by the rise of America and Russia. It is somewhat too late in the day to be afraid of space and manpower of different areas. The freedom of men and the freedom of nations will have to be controlled by the spirit of men; none of the physical factors are by themselves final and decisive.

(d) Split in the Spirit of Europe

Consequently, a final view towards geopolitics will have to be approached from that of the Spirit of Man. The split in the Spirit of Europe is the most important underlying cause of the rivalries of the western people. The Schism in the European soul arose out of the split in the Latin Christianity of Rome. Western Christianity advanced the civilisation of west Europe and parts of Central Europe; on the other hand Russia took over the eastern Christianity of Byzantium. Western Europe after passing through a phase of pagan classical period and early Christianity renewed itself through such changes as Protestantism, Renaissance and Enlightenment. No such corresponding change took place in the eastern parts of Europe. The medieval idea of world empire exercised a fascinating influence on Moscow and later on Germany. In Russia, the secular and spiritual empires were fused. State power in East Europe came to be based on military science, manpower and knowledge of the technique of the manipulation of the mass mind. These and other fundamental differences have caused a deep cleavage in the soul of Europe. The split in the spirit of Europe, coincides with the geographical and hence the strategical division of Europe between east and west. The result is that the east has denounced the cosmopolitan liberalism of the west, individualism and rational approach to human problems. The east has tried to overthrow the west and it is this disturbing factor which has its repercussions over the entire globe. Europe will have to realise that the spirit of man is eternal and the civilisation of India and China though often accused of having neglected the material side of life, pinned its faith in the ultimate triumph of man's

spirit. Europe will have to unite her divided soul and when she does that, the present conflict in the world will assume a sensible and meaningful proportion and dimension. Happen what may, the world will stubbornly refuse to balance itself on a mechanistic conception of space and population.

THE CHAIRMAN: I will not be so rash as to comment on Mr. Venkatachar's very illuminating geo-political interpretation of India and her frontiers. But I will say this, that as an airman I do feel that a further interpretation is also necessary. The influence of sea power and the influence of the physical characteristics of land masses and of the movements of great races over these lands, producing their own particular ethnological, cultural, political and religious conditions, are undoubtedly very great and they have brought us to the present stage. But I know for certain that the movements now taking place in the West, in the U.S.A. and the U.S.S.R. are based on a new vehicle, the aeroplane. The aeroplane is likewise producing profound changes in military concepts.

Mr. Venkatachar quite rightly believes that India plays a tremendously important part in terms of sea and land strategy. I would suggest that our country is assuming even greater importance as the full measure and potentialities of air power are beginning to be realised. I hope therefore that Mr. Venkatachar will accept a suggestion from me and give us a further interpretation of the geographical position of India in view of the developments in aviation.

On behalf of the U.S.I. and all those present, I thank Mr. Venkatachar for the trouble he has taken to prepare and deliver this talk to us, despite the many other demands on him (*Applause*).

MANPOWER AND MODERN ARMS

LIEUT.-COLONEL D.K. PALIT, VR. C.

Lecture on Tuesday 23rd February 1954

[With Major-General J.N. Chaudhuri, OBE, in the Chair]

THE CHAIRMAN: Sometime ago, Colonel Palit, whom you know as a military writer of some considerable reputation, sent me a short article on the subject of his lecture today for publication in the press. I suggested it would be more appropriate if he wrote it for one of the Service journals or gave a talk on it, and as a result this lecture was arranged. The theories he will produce are, to say the least, extremely interesting and well worth consideration. In his various articles published from time to time, he has given us plenty of food for thought, and as most of you are aware he is the author of a book entitled "Essentials of Military Knowledge", which is a standard text-book.

LECTURE

THE purpose of my talk this afternoon is to submit to you my suggestion that, in view of the general political and economic conditions which obtain in this country, it would be more expedient for the Indian Armed Forces to be reorganised with emphasis on massed manpower rather than on foreign arms and equipment. It is my contention that in an India which is so handicapped by lack of finances, which boasts of so little heavy industry, and which desires to avoid military alliances with foreign powers, our Armed Forces must be made to fall in line with our general policy and should be based on an existing national potential—namely, manpower—rather than on foreign imports which in any case we can ill afford—*i.e.*, heavy arms and equipment.

At the present stage of our history it is even more important that we examine this problem in all its aspects. Recent events in national and international spheres have forcibly brought home to us the inadequacy of our Armed Forces. In a country of nearly four hundred million people, the present total strength of the armed forces is negligible. It is true we have no aggressive designs upon any nation, but that does

not mean that we can afford to neglect our defence. And even for a defensive role our present armed strength is hopelessly inadequate.

This being so, something has to be done about it. If we lack the means with which to procure foreign arms; if we do not wish to be dependent upon any nation for the procurement of replacements in time of war; if, in short, we wish to be as independent in our military policy as in our foreign policy, then it is time for us to look around for methods whereby to build up our strength. It is my suggestion that in our search we would do well to consider the harnessing of our manpower potential.

Let me make one thing clear at the beginning. It is not the purport of my talk to prove that manpower can replace modern arms or equipment. The advantage that an army equipped with modern arms has over one that lacks them is too obvious for anyone to attempt to prove to the contrary. What I am endeavouring to prove is that where modern arms are necessarily lacking, a country can so harness its manpower resources as to offset some of the disadvantages of lack of industrial productivity. It is not a question of "Man versus Machine," but of mobilising manpower to fill a gap effectively.

THE RUSSIAN EXPERIMENT

In order to build up the case which I am laying before you this afternoon, I would like to delve a little into recent history. The first example from which to study the planning of an army on the basis of mass employment is the Red Army of the early revolutionary days in Russia. The pioneers of the revolutionary movement, Lenin and Trotsky, scrapped the highly professional army of the Czars and set about establishing a new army of "the peasantry and the proletariat."

Lacking an industrial economy, the two alternatives which faced the new Soviet nation were:—

- (a) the establishment of a small, well equipped standing army, supplied with foreign arms and equipment.
- (b) the raising of a mass army, based on the tremendous manpower resources of the Soviet Union, and supplied only by indigenous industrial effort.

To Lenin and Trotsky the choice was self-evident. Apart from the obvious reason that the new Communist state wished to avoid being tied down by any foreign alliance, there were other reasons also why they chose

the latter alternative. And it might profit us to examine their reasons for this decision, because social and economic conditions as they then existed in Russia are somewhat similar to those obtaining in India today.

Both Lenin and Trotsky were well versed in military and strategic literature, even if they were of the Marx and Engels pattern. They clearly realised that for a concerted national effort, the instrument of warfare, *i.e.*, the armed forces, could not be regarded as an isolated entity, but that it has to be related to the psychological and economic character of the nation. There must be no social or economic hiatus between the people and their army. As War Commissar, Trotsky began to organise his Red Army on this basic principle.

The decision to raise a militia army in preference to a professional one was made after much deliberation. Although it was realised by all that a militia of mere numbers could not aspire to the high standards of professional excellence usually associated with a regular army, it was nevertheless agreed that the real fighting potential of the country was indigenous manpower rather than foreign arms.

At the same time, a small but highly professional nucleus cadre was retained in the High Command. The Soviet leaders worked on the principle that if the direction and leadership at the centre were sufficiently highly organised, then the quality of the militia became relatively unimportant. Given the military technique at the top, the quality of the Army could be entirely replaced by its quantity if sufficient manpower were available.

Simultaneously with the setting up of a People's Army, Soviet Russia also applied the principle of correlation of national strategy to the nation's economic and moral resources. Here, incidentally, lies the significance of Stalin's role in the development of Soviet war doctrine. His contribution was not in tactical or strategic theories but in his process of gearing the Red Army to the industrial effort of the nation, and in fostering in the population that psychological preparedness for war economy which has been the foundation of the modern army of Russia. The principal motivating force of his Five Year Plans was to devise ways and means by which the economic and manpower resources of his country could be so dove-tailed as to realise fully their vast military potential.

During the first and second Five Year Plans, the growth of the Red Army was made coincident with the creation of a vast reservoir of skilled

and semi-skilled labour; at the same time were established those basic industries which were related to the production of war materials. The process of industrialisation was like a shadow war-mobilisation. Innumerable figures can be quoted to show the unparalleled intensity and extent of the nation's industrial growth during the Second and Third Five Year Plans, especially in the field of automotive industries.

All industrial schemes of the nation were advanced in relation to the defence build-up and to the quantity and quality of its manpower. A deliberate if ruthless enforcement of industrial conscription ensured that the spirit of "industry-geared-to-war-economy" was transmitted to its youth. The whole process was a calculated strategico-economic investment for the future, an investment which may have curtailed an individual's liberties but which paid dividends when the Nazi Wehrmacht invaded Russia in 1941. Literally thousands of Russian industrial workers became experts in various branches of mechanised warfare, hundreds of thousands were trained to handle firearms, drive motor cars and even tanks, and to operate signals and other technical equipment. The nation itself became the backbone of the army. Out of manpower grew the national resistance.

THE MILITIA FORCE

It is interesting to know, incidentally, that from a brief survey of the history of Soviet arms it is generally possible to trace the common pattern of war-preparation in other communist countries also. For whether it be Russia, Yugoslavia or the People's Republic of China, the social structure of an agricultural economy was manifestly the same in each country. Differences of degree of course existed between, say, Yugoslavia in the West and China in the East. But the basic conditions were of the same pattern, and their plans for war-preparation were based on a similar policy.

In the absence of an industrial economy, the first start is made with a "rabble" army of quantity, such as exists in China even today, rather than costly professional armies which require astronomical budgets and heavy industries to maintain them. The loss in efficiency of such a militia force is accepted in the initial stages. At the same time, a small and highly trained standing cadre is made responsible for the expert training, direction and war-technique of the armed forces. Before we proceed to the next step in this system, let us examine the advantages of this policy.

A militia army is the most economical base from which a build-up in strength can be made, for not only does it exploit an existing and uncostly potential—*i.e.*, manpower—but it also continues to uphold the economy from which that manpower has been drained. Unlike a professional army of disciplined and segregated soldiery, a militia army is able to continue with its agricultural activities (except of course during actual war). There is no lien on such manpower; the nation is not deprived of any of its labour assets, nor is it required to finance that army to the extent that it would have to do if it maintained standing armed forces.

The arms and equipment of the militia are entirely indigenous, however backward the industrial state of the country might be. The only exception in this case is China, where the output of indigenous arms was so primitive that even in the infantry small arms were until recently entirely those which had been captured from the enemy, Japanese or Nationalist Chinese. The militia did not handle anything more technical than these small arms. If any naval vessels or aircraft were available, these were placed directly under the central standing cadre of experts. The holding of such modern equipment at the early stages was entirely fortuitous and incidental.

Psychologically also, a militia force keeps alive the nation's interest in its armed forces. The defence services are not dissociated from national activities, nor are they maintained as a separate entity. Unlike professional armies as we know them, which even in these enlightened times make only the barest efforts to maintain contact with the general masses of the country's population, the militia army holds the interest of the people at all stages of peace-time development. There is no wall of rivalry or distrust between the "Civil" and the "Military". War-preparation becomes accepted as a part of every citizen's responsibility, rather than being regarded as a "job for the soldiers".

The most obvious criticism of this policy of course is, as I have mentioned before, that a militia army can never hope to attain the standard of efficiency that can be maintained by a standing professional army, trained and led by a cadre of regular officers and NCOs whose career is in their profession. This is an obvious disadvantage, but not necessarily as great a handicap as it is sometimes made out to be. It would be interesting to study how the Communist countries have attempted to overcome this obstacle.

Their national policy is to accept the process of war-preparation as a long term project; and it is ensured that the development of the war-machine is kept in step with the general industrial and economic development. The armed forces are not allowed to race ahead to a position of isolated self-sufficiency. To overcome the attendant handicaps, such as lack of technical equipment, transport, heavy armaments and other necessities of modern mechanised armies, the "rabble" army is trained for guerilla and partisan warfare until such time as the nation's industrial power has been adequately developed to provide the necessary equipment indigenously. The war strategy of the country, during the years of reconstruction is also based on guerilla warfare and the employment of mass manpower. This was the Russian policy in the 1920s and early '30s. This is the strategy of China today. And who can say that the strategy is unsound ?

The second step in the process is the organised industrialisation of the state along a strategic pattern which includes the manpower factor. Industrial conscription takes the place of military conscription, and thus the roots of the armed services are dug deeper into the nation's soil. This ensures that the greater part of defence expenditure is telescoped into and absorbed by the national economy. Whereas in professional armies all the attendant military services are a duplication and therefore an unproductive waste during peace time, in the Communist countries there is no unnecessary wastage for the administration of the Army. It is for this reason that they are able to allot a far higher proportion of their armed forces for actual fighting arms. The "Administrative tail" is much smaller, and consequently a lighter strain on the defence budget.

In our army, for example, we have to maintain separate ordnance factories, supply services, engineering installations, workshops, and medical services. When not actually administering to the armed forces during war, these services are an unproductive and costly luxury especially in a country as poor as ours. Under the Communist system, the administrative services of the armed forces form an integral part of the nation's economic and industrial structure and wastage is reduced to a minimum.

So much for the political and administrative advantages of a militia army. What of its fighting value ? Does military history support the theory that massed manpower can take the field against modern arms ?

Here I would again take you back through the pages of history to see if we can find some guidance from the study of past military developments.

LESSONS FROM HISTORY

Before the advent of the Industrial Age, wars between nations were usually fought on an equal footing. Whether it was the legions of Rome against the Army of Hannibal, the European Crusaders against the forces of Islam, or the Napoleonic Grand Armies sweeping across Europe, the standards of armament and equipment of the various adversaries were generally similar. With the advent of the Industrial Revolution, however, the Western half of the world was able to take tremendous strides in the development of the weapons and equipments of war. The result was that warfare gradually became distinguishable into two different types; the equally matched wars fought between the nations of the West, and the colonial wars of the East.

In the 'Colonial' type of warfare, small well-equipped armies built on the Western pattern were able to exercise their mechanical superiority to subjugate the ill-equipped and ill-trained masses of the undeveloped nations of the East. Examples from history are too numerous for any to require singling out as illustrations to prove the futility of pitching great masses of untrained man-power against the superior fire-power of modern arms. In India, as recently as in the early stages of the Kashmir War, we have seen that all attempts by the hordes of tribal raiders to rush the well-fortified positions of the Indian Army, as for example in Naushera or in Poonch, repeatedly ended in costly failure. In this type of warfare, the balance is usually too heavily weighted against the untrained rabble for there to be any vestige of doubt about the ultimate result.

The experience gained from centuries of such imperial wars and colonial domination gradually gave the Western nations a feeling of complacent security. The lesson that they derived from their experience was that mere manpower had little military value against superior arms and that the only function of the man on the battlefield was the wielding of his weapon. It came to be taken for granted that the war potential of a country depended only on its industrial output, its machines of war. Nowhere was this belief as strongly held as in the New World of industrial advancement, the machine civilisation of the United States.

It should be made clear at this stage that the point under discussion is not the principle of 'numerical superiority' but the employment of

manpower as a strategic potential. Numerical superiority, in its accepted sense, implies the advantage obtained by massing larger numbers of men and material, the general standard of arms and equipment being the same. This is an accepted and unassailable principle. What had so far been discredited was that sheer weight of manpower alone could be reckoned as an asset on the credit side of a nation's war-ledger.

It is not difficult to understand how the value of manpower came to be so utterly disregarded. During the colonial era in military history there is no example of a nation going to war with an army trained, organised and led to fight on a basis of manpower. Isolated instances could be quoted where overwhelmingly large forces of backward peoples have annihilated small detachments of modern armies, but these have essentially been of the nature of isolated battles, temporary phases in a larger picture, incidents rather than wars. On the whole, such mass armies have been too ill-trained, disorganised and haphazardly led to prove a permanent menace. Eventually retribution had to come—retribution in the form of death-dealing modern arms.

The complacency of the machine age, the feeling of superiority which the man-behind-the-gun had enjoyed for so long, was effectively shattered for the first time in Korea. It was in this war that the Chinese Communists proved that manpower could be so harnessed and organised as to be wielded as a nation's strategic weapon. The retreat from the Yalu in the late autumn of 1950 was essentially a victory of sheer manpower over modern arms. What is perhaps more significant is that this initial advantage was maintained and exploited by the continued manipulation, both tactical and strategic, of the same manpower factor. The follow-up by manpower proved as effective as the initial onslaught.

Even today, the full significance of Chinese strategy in Korea has not been universally appreciated. The general feeling amongst the United Nations' Forces was that somehow they were hoodwinked. An atmosphere of unreality pervades retrospective diagnosis. The conception of using manpower as a strategic weapon is still not credited as a practical proposition. The inherent confidence of the Western mind, steeped for centuries in a machine faith, finds it difficult to associate mere manpower with military stratagem.

THE CHINESE EXPERIMENT

The theory of partisan and guerilla warfare with a "steam roller" militia was actually never put into practice by the Red Army. Their

three Five Year Plans ran their course without interference by war and at the end of that period the Soviet State was sufficiently industrialised to reorganise her armed forces on modern mechanised lines. The war industry of Russia by 1939 was sufficiently advanced to enable most of her fighting services to switch to mechanisation and heavy armaments. So although the technique of mass war was laid down by War Commissar Trotsky, it was never put into practice.

As regards actual warfare with mass tactics, it was left to the Chinese Communists to develop and improve upon Russian teaching; and to forge their manpower resources into a weapon not only of defence and mobilisation-cover, but also for use in tactical offensive under favourable circumstances.

In order to study the subsequent development of the mass tactics theory of the Chinese Communists, we must go back to the days of the Eighth Route Army in the Yennan in the middle thirties. Armed mostly with captured weapons, with little reserves of arms, ammunition or equipment, and lacking any form of organised economy, the odds that faced them were overwhelming—the Imperial Japanese Army in the North and East, and the American-equipped Kuomintang forces in the South.

The Japanese attacks were in the form of a series of narrow prongs thrust deep into Chinese territory, but confined to existing lines of communication. To have attempted to oppose them in mechanised combat would have meant annihilation for the Communists. Commander-in-Chief Chu Teh decided to fight the war with his only potential, manpower. To use his manpower to the best advantage, he applied the following tactics for his battles:—

- (a) To deploy a wall of manpower along both sides of the prong, instead of fighting the enemy only at the point of the prong. Thus the whole length of the L of C became a battle-front tying down trained personnel.
- (b) To maintain a constant offensive, striking only where he could surprise the enemy; to concentrate masses of manpower with the greatest degree of mobility; to strike a swift blow, and to melt away again; never to offer a defensive battle; never to fight a losing battle.
- (c) To organise the whole of his own administration, including his small arms factories, on a mobile man-pack basis

and thus give the enemy no L of C to strike at. For instance, the complete hinterland of a chosen battle-field could be set up as an ammunition production area and dismantled again for a swift move within twenty-four hours.

- (d) In battle, to wear down the enemy's resistance by sheer weight of numbers under conditions most favourable for infantry combat.

Thus, he based the Eighth Route Army both tactically and administratively on Chinese manpower, and for nearly ten years the Communists more than held their own against the Japanese Army. In contrast, on the Southern front where the Kuomintang attempted to fight the Japanese on an equal footing without any industrial productive capacity to back their military effort, the war degenerated into a systematic series of reverses for Chiang Kai-Shek's forces.

MOB MOBILITY AND MASS TACTICS

As the Chinese Communists gained more and more territory in their war against the KMT, their manpower also grew in strength. Their mobilised army in 1950 totalled some eight million men. It is true that as their industrial economy progressed, they increased the strength of their regular cadre; but still their militia army was over six million strong. Their war-organisation and training continued to be based on their old teachings.

The Chinese mass training policy even now is built around marching mob mobility. A recent report by a U. S. Officer reads thus: "The Reds have their marching technique down to a fine operating procedure that results in column fluidity; yet the technique is such that control is maintained....the tactics can be poor, and often are, but the mobility of these masses is excellent....It is this mobility that has counted for so much and is still their main stock-in-trade.*"

The great test for the manpower theory came during the Korean war in December 1950. Against the highly mechanised and heavily armed forces of the United States, supported by modern aircraft and naval fire-power, all that the Chinese could produce on the Yalu River was their massed manpower—hundreds of thousands of lightly armed but well-trained and well-led soldiers of the PLA. It must be remembered that in those early days of the war in Korea, the Chinese hordes had received little or no aid from their Russian allies. Except for

* *Red China's Fighting Hordes*, by Lt-Col. Robert B. Rigg., U.S. Army.

a certain degree of artillery support, their mass tactics were still almost entirely centred on infantry manoeuvre.

When the Chinese attacked the U. N. forces it looked as though their lack of tanks, artillery, aircraft and motorised transport would make them easy meat for the American armies. But sheer weight of manpower overwhelmed the U. N. troops. The Chinese massed hordes "flowed" round the flanks of the U. N. en masse and caved in MacArthur's front of advance. The Red armies then lapped around the two inside flanks of his divided army, and the stream of manpower kept pouring in. Neither artillery barrages nor air bombardment could stop the Chinese. To quote one more authority on the subject, Major-General Robert H. Soule of the U. S. Army, who was Military Attache to China from 1946 to 1950, says of the Korean war: "The Chinese are still sticking to the principles they have always used in warfare.....They always attempt to mass their forces so that they outnumber the enemy five or six to one. Even when the opposition had superior over-all numbers (as sometimes happened in North Korea), the Reds probed for a weak point and then threw overwhelming masses at that point. If they were stopped, they proceeded to withdraw in order to regroup their forces."* The Chinese suffered tremendous casualties, but they had expected to do so, and had calculated for them. This horde that moved on foot, without air support or armour, with few weapons larger than their mortars, that cared little for their casualties, introduced a new factor to modern strategic concepts..

When the PLA massed its hordes against the forces of the United Nations on the Yalu front, their object was two-fold—to stem the advance on the Yalu River, and to gain time for war material to arrive from Russia. They repeated the same strategy as they had employed against the Japanese a decade earlier, and then having succeeded on the defensive, they were able to carry their massed warfare tactics to the offensive.

The venture was as successful as it was unexpected. Ill-equipped but highly trained, with fanatical morale and determined leadership, sheer manpower won the day against some of the best armed and equipped of the world's armies. Not only were the Chinese able to hurl back the United Nations behind the 38th Parallel, but also to keep them at

*In an interview, in Korea, by J. Becker of the Associated Press, March 1951.

bay long enough to enable the Soviet Union to rush through war supplies.

MANPOWER AND INDIAN DEFENCE

I think it will be agreed that the results of the experiments tried by the Russians and the Chinese have established the point that I set out to impress upon you—that in the absence of the necessary heavy industries which feed modern well-equipped armed forces, a nation could mobilise its manpower potential for its defence needs if the conditions were favourable. In the short time left to me now, I propose to examine the question in the light of contemporary Indian conditions.

Before I embark upon this, I would like to clarify one point. It is merely a matter of historical accident that the experiments mentioned above have been carried out only by Communist countries. The military principles themselves, though enmeshed with political considerations, can be treated as essentially strategic concepts and need not be considered as a monopoly of the Communist or any other creed. The adaptation of the theory may vary with different nations, depending upon their form of government, but the military principles which we have established remain the same—the employment of manpower as a strategic factor.

I hasten to assert this non-political character of the theory which I have endeavoured to advance in order that mere aversion to a political creed might not prejudice you against what is essentially a military consideration. There are of course certain aspects of its application in a Communist dictatorship which could not be adopted in a democratic country such as India. The main principles however are applicable, regardless of the method or mode of enforcement.

I would also like to point out that in discussing this subject I can only touch upon its broader aspects. The application of the theory of using manpower as a strategic factor for Indian defence requires examination in great detail and in the light of diverse considerations—economic, social, political and statistical—which I have neither the means nor indeed the knowledge to investigate. However, if the only result of my efforts be that it induce those better qualified than myself to examine this problem in all its implications, then I shall have felt amply rewarded.

The characteristics of our armed forces today, in so far as they pertain to the problem under consideration can be enumerated as follows:-

- (a) They are essentially professional in nature, well armed, well

led and well equipped, but dependent upon foreign procurement for all armaments except small arms and light support weapons.

- (b) They constitute too small a percentage of our population in manpower strength.
- (c) They are in a state of isolated self-sufficiency not in keeping with general social and economic conditions obtaining in this country.
- (d) As they stand today, they represent their maximum expanded strength and cannot be appreciably increased without seriously jeopardising our economic stability.
- (e) Finally, they are considered inadequate in potential strength to uphold the country's policy and its independent and forceful stand in international affairs.

If these characteristics are individually accepted as correct, then the five of them considered together lead us to the obvious conclusion that the defence policy of the country is not sufficiently flexible to back up its international responsibilities. Let us see how far the adaptation of the manpower theory is practicable and desirable in finding a solution to this stalemate. The solution in my opinion should fulfil the following conditions—it must effectively increase the potential defence strength of the country without adding to its budget; it must base the armed forces upon the nation's own resources; and it must plan for the future strategico-economic build-up, where the goal would be to maintain modern and well-equipped armed forces supplied by indigenous industrial output.

The first condition could only be fulfilled if we reduced considerably the costly standing army of today to a central cadre of say, one-fifth or even less of its present size, and raised militia armies in territorial or Field commands totalling up to three or four million lightly armed men trained for mass tactics and guerilla warfare. The cost of such a militia army would be far less than that of a standing army of even one-tenth its size because the militia would require few overheads in defence costing. The greater part of the manpower would continue with its agricultural economy and bear arms only to train, and of course to fight in the event of war.

In view of what has been said before, it is felt that in a country as vast as India, served as it is by comparatively few lines of communication, a well-led militia of massed numbers could effectively bog down if not repel

any enemy attempts to invade our territory. With the central cadre of professional services as a compact hard-core reserve, such an organisation of Indian defence would, I feel, serve a more useful purpose than the present defence set-up in case of a determined invasion of our country.

The second condition that we listed above, that of basing our armed forces upon our own national resources, necessitates that our defence services should for the present be based on small arms, the only supporting arms available being mortars and mountain guns of Indian manufacture. This is not to say that we should discard any modern equipment that we happen to hold at present, such as tanks, aircraft or heavy guns. On the contrary, full use should be made of existing stocks but they should be kept under direct control of the central cadre. The militia force, the main fighting body, should be equipped only with such arms as can be produced in India. Only then can it continue to keep fighting for an indefinite period—as long, in fact, as an invader retains a hold on Indian soil.

This militia should be entirely a marching force, with each territorial sub-division maintaining its own mobile man-pack or animal-pack services. Ponies or bullock-carts, not mechanised transport, would be their carriers. All motor vehicle holdings would again be kept with the central reserve, unless of course India could undertake production of M.T. on a sufficient scale.

It is necessary to add that this militia would not in our case require to be a "rabble" army such as the Chinese were forced to raise. Our industrial development, our existing defence organisation and training, and the stable system of our national administration preclude the necessity of starting right at the beginning. We are fortunate enough to have already started on the road to industrialisation, much in advance of the China of 1950 or even of the Russia of pre-Revolution days. Our militia could therefore be better equipped and trained than the rabble army which the Communists had perforce to raise.

Lastly, a future defence policy adopted under this scheme would also have to provide for industrial conscription of manpower resources so that the country embarks upon a planned future of progressive modernisation of the militia. The ultimate goal would be to maintain fully mechanised armed forces supplied entirely by indigenous industry, and able to fulfil their function of providing for the defence of India without necessarily

having to seek the aid of other nations. For this purpose a carefully coordinated policy of industrial reconstruction compatible with strategic requirements would have to be worked out. In a free democracy such a step would be more complex than in a dictatorship, but this should not deter our leaders from devising a workable formula.

These then are the broad outlines of a possible plan to incorporate a new idea—the mobilisation of manpower for defence and industrial reconstruction. Much more detailed examination of the problem in all its aspects would be required before the practicability of the plan could be accepted. As I have said before, not all the conditions which obtain in a Communist or dictatorial form of government are suitable for India's adaptation. No ruthless exploitation of manpower as has been resorted to in China can be permitted in a country such as ours, which has learned to cherish individual freedom as highly as national independence. Any plan drawn up for enforcement in our country would have to be a plan acceptable to the Indian people as a whole.

These considerations however are merely political expediencies which could be adjusted according to our national requirements. The military principle itself should not be rejected merely on account of its unorthodox nature or because of the difficulties of adapting it to suit local conditions. The military requirements of the nation should not be overshadowed either by mere conservatism or by political prejudice; and the present requirements are plain for all to see—an adequate armed strength to hold our own, on our own, against all possible invaders of our territory.

DISCUSSION

AIR COMMODORE P.C. LAL: The lecturer's whole argument is based on the assumption that countries which are economically poor and lack industrial resources to build up really effective mechanised armed forces can fill the gap temporarily and cheaply by raising large national militia forces. He has quoted Russia and China as examples, but do we know enough about them to support his argument?

Take the case of China. The strength of her armed forces runs into millions, which I cannot help thinking must consume a very large proportion of the national budget. Yet it is not correct to say that manpower replaces machines. On the contrary, it is now well known that China has developed her air force to such an extent in recent years that she ranks as the third air power in the world.

In my opinion, it is dangerous for us to equate ourselves with countries of which we do not know enough, and to proceed to reorganise our forces on what may well turn out to be false principles based on fallacious arguments.

THE LECTURER : We do not know what the Chinese have spent on their militia budget. Not many people are qualified enough to speak on the Chinese budgetary position. But there are two points I can make. One is that we do know Soviet expenditure on the first three 5-year plans. It was considerably less than what, for the corresponding period, was spent by the Western countries. Secondly, when the Red Chinese Army was first raised they had no organised finances, let alone a war budget. If they could build up from so little an army of 8 millions or more in so little time, it is immaterial what they are doing today. To maintain a militia army need cost nothing more than actual expenditure on arms and ammunition. Thirdly, the Chinese Air Force may be large, but it is entirely foreign sponsored. They have no aircraft industry of their own.

COLONEL RAJINDAR SINGH : Whilst discussing the possibility of building up a Militia Army in India, one of the important factors that needs close examination is the qualitative manpower potential of the country as compared to China, the country in respect of which examples have been quoted by the lecturer. As a result of China having remained war torn for a period of over four decades its population as a whole has been getting some sort of military training and has become war-minded. To form a Militia Army out of such a stock, therefore, is much less complex and easier to speed up than in the case of India whose population has for a very long period been leading a peacefully stable life and remained divorced from military training irrespective of the fact that our regular armed forces have proved second to none. The proposal of forming a large and dependable type of Militia Army in India although it seems sound when discussed on paper will, it is considered, not work in practice.

THE LECTURER : I do not accept the argument that the Chinese have always been a warrior people. It is true that for many generations they have been a war-torn people but mostly by war lords and robbers. The people themselves have always looked down upon the profession of arms. Yet, within a short period of less than 10 years or so, the Chinese Reds have raised an effective militia of 8 millions or more. In India, on the other hand, the history of Maharattas, for example, has taught us that Indians can be rapidly organised into massed armies. Our people are amongst

the best fighting people. In any case, it does not really matter whether previously a people had a fighting tradition. A nation can be raised to the status of a fighting people by correct leadership and indoctrination.

COMMANDER V. A. KAMATH. I. N.: I presume the lecturer in advocating the militia type of fighting forces is confining his remarks to the Army. For Naval warfare, officers and ratings cannot be trained without ships, and any increase in personnel without corresponding increase in ships can have no practical advantage, and will on the other hand be wasteful.

THE LECTURER: The Navy falls into the category of being a technical service which happens to hold stocks of modern heavy arms and equipment which cannot be manufactured in India. The present navy would therefore be controlled by the Central reserve, as mentioned in my talk. It can best be used centrally in time of need, until its equipment has been expanded.

BRIGADIER G. G. BEWOOR: The speaker's suggestions are, in my opinion, suitable for a defensive war. I would, however, request him to give us his views on how such militias could be used if India was forced to undertake an offensive war.

THE LECTURER: I am not suggesting that we can go to war on the offensive with a militia army. The Militia Army that I have envisaged is essentially something which would absorb a foreign invasion, not necessarily take part in a war abroad, although the Chinese have in fact been able to take their war down to Korea. Essentially their regular army was not much better off in weapons and equipment than our militia as proposed today. I was not discussing an army which could fight abroad, but which could effectively defend our country against invasion.

THE CHAIRMAN: While Lieut. Colonel Palit was speaking, I made a few notes, because as you can see his ideas, as such, appear attractive. It is obvious if you accept his thesis that the Navy and Air Force will have to be included in the small technical nucleus and will expand as the country's industry expands.

My own reactions to his views are as follows.

First of all the leaders of the revolutions in Russia and China had the opportunity to study military strategy very thoroughly. In the case of China they had actually commanded troops in the field. As far as Russia was concerned they went into their first major war after they had developed

their industry in support of their armed forces, while in the case of China, conditions in the country helped the civil war and in the war in Korea there was a backing of material from other sources. These conditions do not apply to India today.

Secondly, I feel that the lecturer appeared to dismiss what strikes me as being the crux of the question in one sentence, *i.e.*, the need for direction of national manpower. His theory is workable if there is complete and perhaps ruthless centralised direction of available manpower. There is little individual preference allowed, but talents and lack of them are used to the best advantage by the State. Our Constitution does not allow of such direction.

Thirdly, there is only one party in power both in Russia and China. Under a still developing democratic system, such as we have today, it is unlikely that one can obtain continuity of major policy, irrespective of whichever party is in power. In my opinion, continuity is a pre-requisite to the suggestions proposed by the lecturer.

With some of the remarks that have been made, I agree entirely. Much could be done to streamline our forces, particularly with regard to the administrative tail. There are also too many overheads even now, which could be reduced. Perhaps certain services could be combined.

I like lectures of this kind. Whether you have agreed or disagreed with the speaker, he has certainly given us all something to think about and no one has been bored. This talk will go into the next issue of the U.S.I. Journal and if anyone has any comments, they should write to the Editor about it. This may start an interesting discussion.

I would like to thank Colonel Palit, who has come all the way from Dehra Dun and who has worked very hard on this lecture. (*Applause*).

ADMINISTRATION—THE HUMAN ASPECT

S.B. BAPAT, I.C.S.

Lecture on Tuesday 9th March 1954

[With Commodore G.A. French, R.N., in the Chair]

THE CHAIRMAN: I have great pleasure in introducing Mr. Bapat who is a very experienced member of the Indian Civil Service, and who until recently was a Joint Secretary in the Home Ministry as well as the Principal of the Indian Administrative Service College at Metcalfe House. He has just taken over as Director of Organisation and Methods to the Government. We are about to hear a very interesting lecture on that all-important subject of the Human Aspect of Administration.

LECTURE

I AM beginning to feel that I was rather rash in accepting the suggestion that I should give a talk here. For five years I have been talking to youngsters who have just finished their studies in the Colleges and Universities and have very little experience of administration. Sitting in the I.A.S. Training School and talking to the boys gives me a great feeling of omniscience and importance. Coming here today I have to talk before an audience of people who have already had years and years of practical experience of handling men and affairs. To talk to them about administration is, I fear, too bold an experiment. I hope that if any of you feel suddenly that I am slipping into my tutorial manner, you will make some sign or indication that will bring me back to my present surroundings.

I also think that I was rather rash in the choice of the subject. I am talking to an audience of men whose professional training gives them a very strong sense of precision and clarity. Whether you are drafting appreciations, whether you are drafting reports or issuing orders, you know how to put things briefly and clearly and precisely. My trouble is that the subject which I have chosen is distinctly imprecise. "Administration" means many different things to different people in different

contexts. If a member of the Armed Forces hears the word 'Administration', it probably brings to his mind what the 'A' Branch has to do as distinct from what the 'Q' Branch looks after. If you talk to a lawyer of 'Administration', he immediately thinks of managing an estate under the terms of a will. If you speak to a doctor of 'Administration', he probably thinks of administering medicines and treatment. I am quite sure that even Mr. Appleby*, whom we have with us, and who is one of the greatest authorities on the subject, will agree that there is no completely satisfactory definition of the meaning or content of the term Administration. My own experience has been in the field of 'Public Administration'. So my thinking naturally tends to emphasize that character. As a matter of fact, I had at first said that my subject should be announced as "The Human side of *Public Administration*." Then I deliberately dropped the word 'Public' because I realised that the 'human' side is equally important in all types of Administration. I must warn you, however, that what I say will be largely connected with "Public Administration" as we see and understand it. I might as well say too that this talk will contain very little or nothing that is really new to you. It will, at best, be a restatement in different words of thoughts and feelings you must all have had from time to time. There is, nevertheless, some advantage in getting together, getting somebody to start thinking on the subject and then out of that to go on exchanging ideas. I shall feel, therefore, that my purpose in daring to talk to you is well served if what I say does stimulate a little further exchange and interaction of minds on this particular topic.

Even the word 'human' is not really very precise. I had a vague feeling that most of us tend to confuse 'human' with 'humane'. In order to clear my own ideas, I consulted the dictionary and the dictionary gave me the correct line. "Humane" is defined as 'kind, merciful, benevolent' and so on. I am not going to talk about the human aspect of administration in that sense at all. "Human" in the dictionary means 'having the attributes of man as distinct from gods' and that gives us the correct line.

BASIC FACTS

In fact what I wish to develop is confined strictly to the fact that we are all 'human beings' and we are neither gods nor devils. We are just human beings with all our human failings and imperfections. That

* Mr. Paul Appleby, who has made a survey of Public Administration in India and submitted a Report to Government. (Ed.)

is a very basic fact. In pondering upon the bearing of that fact upon Public Administration, the immediate thought that comes to mind is this: the problems of administration would not exist at all but for the fact that we are all human beings and not gods or devils. If we were all saints and if we were all conscientious, there would be no crime and no need of a police force; there will be no smuggling and no Customs Officers; there would be no failure on the part of anybody to pay taxes. You would not need any audit and you would not need any Defence Forces. On the other hand, if we were all sinners or devils, Administration would be completely impossible. There wouldn't be enough policemen and tax-collectors and auditors to be had; everyone would be lining his own pockets at the expense of the others. So administration is *necessary* only because we are all human beings and not gods and saints and it is *possible* only because we are not all sinners and devils.

Another basic fact is that all administration is done by human beings and through human beings and for human beings. That is true of every sort of administration. The whole process of administration consists of some *body*—it may be one human being or it may be a group of them—deciding what is to be done and some other human beings carrying out or giving effect to these decisions. But that is not the whole story. The most important point is that it is all done for human beings. The purpose, the end, of all administration is to satisfy *human* needs and *human* desires and nothing else. If the purpose of the administration is to satisfy the needs and desires of *one man*, we get something like a dictatorship. If it is the needs and desires of a *few*, we have an oligarchy or a one-party rule, and if the needs and desires of as many human beings as possible are to be satisfied, we get a democracy. That, in fact, furnishes the test of a true democracy.

ESSENCE OF DEMOCRATIC ADMINISTRATION

The test of true democracy is how far the decisions and the actions taken on behalf of the people do in fact satisfy their human needs and desires. This test also gives a measure of the efficiency of a democratic administration. Is the administration succeeding in meeting all the human needs and desires for the satisfaction of which it exists? There are democracies and democracies; they differ in size, and the human beings who compose their citizenship vary in character, temperament, education and other ways. If the people are backward, they are not in a position to express their needs and wants. The problem, therefore, becomes

something more than merely satisfying desires which are agitated. The desires and needs of the human beings must be *ascertained, understood and satisfied*. No administration is efficient unless these three things are done to the maximum possible extent. In a large group you may have conflicting desires and conflicting needs. But then that democracy, that public administration, is more efficient which produces satisfaction of the human needs of the largest number and satisfies the needs and wants which are most keenly felt. Every person engaged in the process of administration has to ask himself: Have I found out and understood what the people need most? Are the decisions and actions with which I am concerned giving the people what they need? If the answer is not satisfactory, there must be adjustments; there must be corrections. In fact, there must be, if necessary, a redesigning of the whole machinery and methods and everything that goes to make administration efficient. You may find it difficult to believe it—but even in the best of administrations this test is not applied constantly. The trouble is that as the number of people whose affairs are to be looked after increases, the complexity and the number of men engaged in it also increases. If a set of people are running the people's affairs for the benefit of the people, with the money of the people, it is obviously necessary that the operations are conducted in such a way that waste is avoided. The people's money must not be wasted. The people's resources must be conserved. So for the very process of administration it is necessary to introduce safety mechanisms and controls. It is necessary to have rules and regulations and procedure, accounts and audit and all sorts of things which will *show* that everything is done with due care and caution. The danger is, and it is an ever present danger, that these safety mechanisms and these controls themselves assume such an importance that the end and purpose of the administration tends to be forgotten.

SOME EXAMPLES

I have seen some extraordinary instances in my life which show how grave that danger is. The real purpose of administration is being forgotten by individuals and by whole groups of people engaged in the process.

There was a postman in some station in Rajasthan. *This* man's duty was to walk every night from the town to the railway station which was some three or four miles away to meet the train and collect the mails. This was his job. One winter night, it was raining very hard, and he had already got an attack of fever. Nevertheless, he was a dutiful man

and he went to the station and met the train. That night he got Pneumonia, and died. In the rules which have been made for the running of people's affairs, some provision is made for paying some pension to the dependents of the men of this kind who die while on duty if the death is attributable to special risk of the job. The rules also say that if the payment could not be made under the rules, it might be made *ex-gratia*. That case was referred here to the Government of India. When I saw those papers for the first time nine months had already elapsed in discussions, on the interpretation of the rules, between the Law Ministry, the Finance Ministry, the Home Ministry and the Communications Ministry. They were all wrangling over whether the death could be attributed to any special risk or whether any payment could be made *ex-gratia*. After some time, they came to the conclusion that some payment could be made. Then the discussion started about the head under which it could be accounted. When I saw this I lost my temper. I sent for the man concerned in my Office and I wrote a very caustic note for the benefit of the other men in other Ministries. No one seemed to have remembered that while all this discussion was going on, the poor widow and the children had been made to wait for nine months without any help from Government. They could easily have paid the money first and then decided at leisure about the head to which it should be debited. Everywhere these papers were handled by human beings, for human beings without heed to the human aspect.

I have another instance. In Bengal, soon after the Bengal famine when everything was being done to increase food production, arrangements were to be made for the supply of potato seeds to cultivators in areas where potato cultivation could be introduced. The land was all right, the climate was all right and water could be arranged when needed. A lot of propaganda by the Agriculture Department was done to get cultivators to prepare the land and to keep it ready for the seeds which Government was going to give them. The plan for distribution of seeds was tossed about from one set of officials to another set and by the time all the details were settled the potato seeds had rotted in their storage place and the time for sowing had gone past without anybody realising it.

Things like this do happen frequently. I will give you one more instance. A couple of years ago, one day my servant came back from the ration shop having gone there on the due day to collect his rations. He told me that the shop was shut but he could not find out why. On later

inquiries we found out that the Inspector's Inspector had said that he would come round and inspect the shop and check the stock. The Inspector had therefore instructed the shopkeeper to keep the shop closed. Now you know what happens in the ration shops. If for some reason you cannot draw your ration on the due day of the week, you have to wait for seven days until that day comes again. The Inspector in question apparently had no thought at all for the hundreds of human beings who must have suffered severely because of his thoughtless action.

To repeat again, the professional administrator who wants to be efficient and to do his job properly must ask himself: Am I really satisfying the particular human needs and desires which my job is meant to satisfy? He must go on and on asking himself this question at every stage.

INSTINCTS AND SENTIMENTS

Now, what actually are the things which human beings need? Pondering on this, one soon realises that it is not merely a question of the physical necessities of life such as food, clothing and shelter. Human nature is full of a lot of instincts and sentiments. Patriotism is a sentiment, altruism is another. Most men feel an urge to be patriotic and altruistic. It is the duty of the administration to see that they are enabled to give expression to that urge. The desire to work for the community is there and the policies and programmes of the Administration have to be modified if necessary to take advantage of that desire.

THE HUMAN ASPECT OF ADMINISTRATIVE RELATIONS

However, of all the sentiments which motivate human action, the most important ones from the point of view of the professional administrator are, the sentiment of loyalty, and the self-regarding sentiment or, used in this special sense, self-esteem. Since Administration is being carried out by human beings, for human beings, the professional administrator is up against the fact that the tools for carrying out this purpose are also human beings. For good workmanship it is necessary that the tools should be kept in the best condition. That kind of attention to human beings who are used as tools in the process of administration requires constant vigilance. In a democracy the major decisions about what is required for the people and how it should be done are taken by the people's representatives sitting in representative institutions. But the carrying out of what is decided is left to the professional administrator. The professional administrator

himself functions in an environment in which, generally speaking, there is some one from whom he has to take orders and some others to whom he gives orders. Treating all these as tools and implements for the carrying out of the purpose of administration, it is easy to see how attention to the human aspect helps. Let us consider the relations with the boss, the man above you. Loyalty and Self-esteem are very much at play there. If you want to get the best out of your boss, he is entitled to loyalty and that loyalty does not merely mean carrying out his orders—it means giving him all your best in the way of judgment and advice to him. But, if the final decision rests with him, the orders that he gives must be carried out and carried out loyally. If you conceal from your boss the fact that you disagree with him, that is disloyalty. But if you tell him what you think and having considered well he says, "Well I think this ought to be done", it is your job to do it loyally. The boss must see that his subordinate has got confidence in him. If doubt or distrust is shown, the relationship at once breaks down. The worst form of doing it is to say: "O.K. You are the boss. I will do what you say but I'd like it in writing please." It *implies* that he is such a dirty dog that he would deny giving the orders if something goes wrong.

Turning now to the human aspect of relations with one's subordinates, loyalty and self-esteem play an even more significant part. As your chairman once said: "Loyalty downwards is more important than loyalty upwards". The secret of good administrators is sometimes expressed in this form:— "All you have to do is to choose your subordinates carefully and delegate freely and then you sit back and let them do the work." All of us cannot always freely choose. But whatever subordinates we have been given we can still develop and improve them and get them to be better tools than they are. Delegation makes a subordinate feel that he is trusted and that he has your confidence. Make him feel that you value him, that he is good enough to do the job. If he does make a mistake, you must take the blame. If he does not make mistakes, and if he does the job well, give him full credit. That is the essence of loyalty to the subordinate. Self-esteem is a brittle thing. Where praise is due, it must be given and it must be given as publicly as possible. But if you have to blame or admonish do it as privately as possible. Even a dog will resent being scolded in the presence of others. To make any human being feel small in the eyes of his own colleagues or his own subordinates, is the worst injury you can possibly inflict. Your subordinate is a human being, he also has feelings.

ADMINISTRATION AND THE CITIZEN

Finally, at the receiving end of Administration are more human beings whose self-esteem has also to be preserved. We have found in our experience that administration consists very largely of saying 'no'. When there is so little to be given and so many claimants for a particular privilege or concession, a choice has to be exercised and a lot of requests, claims, and suggestions have to be negatived. If the man who goes to the professional administrator with a request or a claim is merely brushed aside, if you merely say 'no' without explaining why, you have failed to satisfy a human need. It is a human need to know why. Now most of us have to spend a lot of time in seeing the people who come to us. They are human beings. They come and tell us what they want. Taking by and large, almost all human beings are very reasonable fundamentally and if it is explained to them they appreciate the other side and go away. They may still be disappointed at not having got what they had asked for, but what about the man who goes away with double disappointment—he does not get what he asks for and also knows not why.

Actually, quite a lot of people who come with requests and suggestions know very well how weak their case is but they feel that there can after all be no harm in trying, and like to take a sporting chance and hope to get away with it. Even in such cases it is important that a hearing is given and reasons for refusing the request or suggestion fully explained. Even a desire to have a sporting chance is also a human need.

The subject of "The Human Aspect of Administration" offers limitless opportunities for development. I notice, however, that I have already taken longer than I should have and I think we are all becoming conscious of a very important human need, *i.e.*, a good cup of tea. I shall therefore thank you again for this opportunity and bring my talk to a close.

DISCUSSION

CAPTAIN M. K. HEBLE I.N.: The lecturer made a reference to the danger of rules and regulations assuming greater importance than the purposes for which they were originally made, and the human beings for whose benefit they were made. Can a scheme be devised to guard against this danger?

THE LECTURER: The only real safeguard is for every administrator to maintain conscious and constant vigilance on his own attitudes

and actions. It should also be the duty of every officer in the hierarchy to satisfy himself that those below him are not allowing excessive regard to rules and regulations to obscure the human aspect. It is also necessary to overhaul the machinery and procedure to the same end. A start has recently been made by the setting up of an Organisation and Methods Division in the Government of India.

BRIGADIER AJAIB SINGH: The existing rules and regulations were framed over a period of some two hundred years or so and are therefore out of date. Do you propose to frame completely new rules and regulations or review the past ones, and where do you propose to start?

THE LECTURER: All reform should be an evolutionary rather than a revolutionary process. Where you are dealing with human beings, it is best to examine what you have; to find out what is wrong with it, and to repair, replace and where necessary to redesign. I do not myself believe it is either necessary or possible to start on a clean slate and to frame entirely new rules and regulations.

LIEUTENANT COLONEL DEWAN SINGH: Rules and regulations are not only out of date but also very cumbersome in procedure. Efforts to improve them in their existing form will only be touching the fringe of the problem. Wouldn't it be advisable to gather all the Manuals of such rules and regulations, make a bonfire of them, and set up high-powered expert committees to reframe them *de novo*?

THE LECTURER: My answer still is that it is better to adapt than to scrap.

BRIGADIER AJAIB SINGH: The interpretation of these rules is left entirely to the individual with the result that the interpretation of the Defence Services is different from that of Finance, and the variation always results in delay.

THE LECTURER: It is one of the necessary requirements of a democratic Government that all citizens and all Government servants should receive equal treatment and that different branches of Government should not go in different directions. Some co-ordination and mutual consultations between the Ministries is therefore absolutely necessary. The danger to be avoided is that there may be excessive indulgence in consultation and co-ordination. That is the task of all concerned with designing and reviewing the organisation and procedures. Some delay is inevitable, but there is no reason or justification for unnecessary delay.

CAPTAIN M. K. HEBLE, I. N. : You also made reference to the danger of Administrators losing touch with what you called the "receiving end". Since administrative decisions invariably have some financial implications, it usually happens that the last word lies with Financial Authorities. Do you not consider it necessary to devise a scheme, whereby Financial Administrators could be brought into closer and more frequent personal touch with the "receiving end" ?

THE LECTURER : I wholeheartedly agree. The Indian Institute of Public Administration, which we propose to inaugurate in the near future, will endeavour to bring together the professional administrators, the academic students of the subject and also the citizens, to a common forum, for study and discussion of administrative problems. The degree to which financial control should be provided internally and externally is one of the most difficult and controversial problems. The ultimate solution must always lie in seeking the middle way in which the maximum advantages are retained and the disadvantages avoided as far as possible.

BRIGADIER M. N. BATRA : Is there any system in force at present to ensure that responsible administrative posts are only held by capable men who have experience in dealing with human beings ? It seems that merit has been overlooked and public administration is being run by men whose main concern is to remain in service for as long as possible.

THE LECTURER : Manning the machine so that the right man is in charge of the right operation is again a difficult problem. One can never be absolutely certain of succeeding, but the best that can be done is to provide a selection procedure which will ensure that promotions are not made merely on the basis of seniority but rather by relating the duties and responsibilities of particular posts to the proved efficiency of the officers proposed to be appointed.

CAPTAIN B. A. SAMSON, I. N. : Specialisation in administration tends to make it less human. An officer should not be at Headquarters for more than three years. He should then go back to an executive appointment.

THE LECTURER : The old I. C. S. had a system under which after a spell in the Secretariat the officers went back to the districts. Even in the Central Secretariat Service we have introduced the scheme for sending picked officers for executive training in the field before they are again brought back to the Secretariat.

CAPTAIN M.K. HEBBLE I. N. : Is there any reason why Service Officers should not hold administrative appointments like Civil Service Officers? I observe that in the old days Service Officers on the active list used to hold Secretarial appointments in the Ministry of Defence.

THE LECTURER: No reason at all. Ex-Service officers were in fact recruited after the war into the new Administrative Service.

MR. PAUL APPLEBY: I have been greatly impressed by the deep interest shown by members of the audience in matters of Administration and also by the sense of urgency revealed in the questions put to the lecturer. The improvement of administrative arrangements is my special concern, of course. But some words of caution are in order.

In one of the biggest reorganisations in the machinery of Government in the U. S. A., the result for the first five years was a loss in efficiency although in the end the reorganisation fully justified itself as a means of producing greater efficiency.

In this context I am reminded of a story told by a retired Captain in the U. S. Navy. He was proceeding up the Yellow River against a current of 6 knots in a gunboat whose maximum speed was $6\frac{1}{2}$ knots. Furthermore, every time the generators were switched on for wireless transmission, the speed dropped by $\frac{1}{2}$ knot, but the Admiral insisted on asking for progress reports by wireless every half an hour!

THE CHAIRMAN: We are all very grateful for this very stimulating and sincere lecture which has provoked more discussion than usual. Of the many points brought out by the lecturer, I would like to stress just two.

The first is that we in the Ministry of Defence, by which I mean not the present narrow conception of Ministry of Defence, but a Ministry organised as a proper and objective combination of the fighting man, the civil servant and the financier, must never forget that our real function is to provide the circumstances and support necessary for the commander in the field, the sea leader and the airman to establish in the troops he commands, a moral and material ascendancy over any potential enemy.

Secondly, I feel that there is a failure to take responsible decisions at all levels with the result that too much is referred to the top. This is partly due to a lack of objective minuting on files which have tended to

become an end in themselves rather than a means for obtaining balanced and rapid decisions on administrative questions all of which contain a human factor.

I again thank the lecturer and also Professor Appleby for the great contribution they have made today, and for honouring the U. S. I. with this talk. (*Applause*).

CHANGING PATTERNS OF NAVAL WARFARE

THE TECHNICAL REVOLUTION AND SOME OF ITS CONSEQUENCES

DR. G. E. GALE

Scientific Adviser, Indian Navy

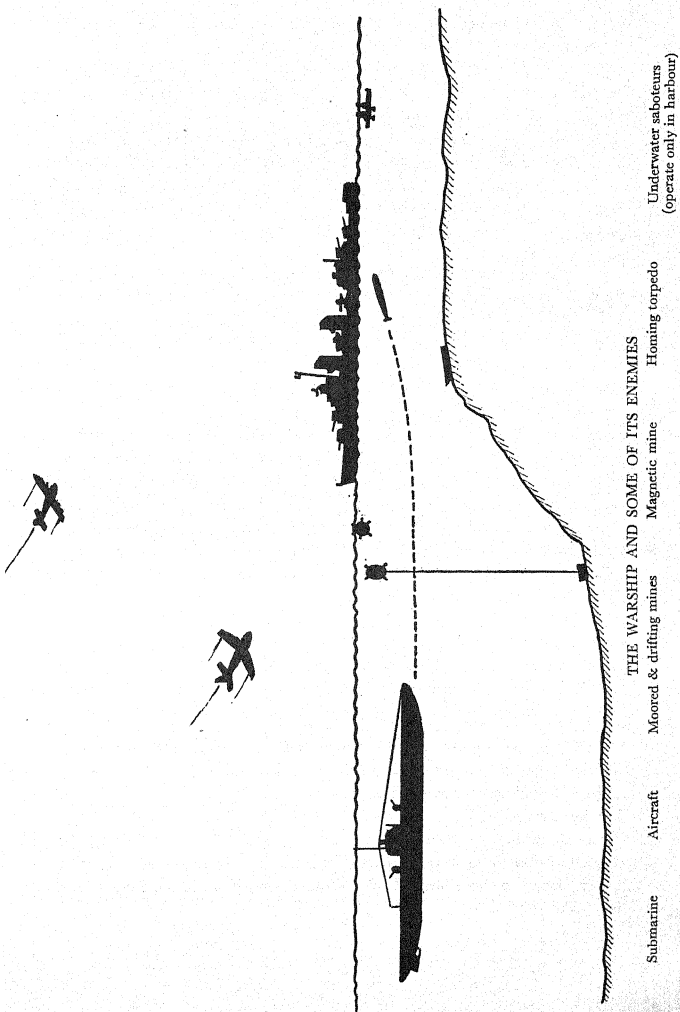
THE SUPERFICIAL PATTERN

IT is a truism that the principles of war, like the laws of nature, have remained the same throughout all ages, although complete recognition and understanding of both have been lacking in some eras, and indeed still are. It is equally true that man himself has not altered either. Yet against this unvarying background we have seen in recent years, during a period which represents only a small fraction of recorded history, the passage of enormous changes across the face of warfare; changes, too, which are still in progress in this field as in so many others.

The superficial alterations which have occurred are so obvious and so striking that they tend to disguise the more deep-seated aspects of the revolution that has taken place. The aims of warfare are still the same; but the methods of achieving those aims are now not only very different, they have amongst other things reacted profoundly upon the personal qualities and capacities required of the individuals who employ them during hostilities.

It may be useful to review once again the changing pattern of naval warfare to help one appreciate some of the deeper issues involved. The historical approach is valuable, in any case, as a possible guide to the future in a world which is still in course of change.

Little more than a hundred years ago a naval battle tended to resolve itself into a series of duels between individual wooden ships, sail-driven, and armed with muzzle-loading cannon. The projectiles were usually solid shot, whose exchange at close range was the opening phase of a contest which normally ended in hand-to-hand fighting on the deck of the ship which had received the more serious damage.



The dependence upon wood for construction and wind for propulsion automatically imposed a certain degree of uniformity upon the performance of the warships of the day. It was not possible, for example, to construct wooden ships of more than a certain size for purely mechanical reasons. The ships of all major naval powers thus fell within much the same limits of size and gunpower, and were restricted to much the same order of speed also, since under no circumstances can a sailing ship move faster than the wind and sea will let it. In those days, therefore, the decisive factors in battle were, broadly speaking, the courage, skill, determination and seamanship of the opposing crews and their leaders.

Consider, on the other hand, merely the defensive problems of a modern warship, which are altogether more complex than those which confronted its wooden fore-runner. The latter had only to fear other ships armed and equipped like itself. Naval vessels armed nowadays have, of course, still to meet and face other naval vessels armed like themselves ; but in addition they have a number of other enemies. A third dimension has been added to naval war ; there is danger now from the sky above and from beneath the sea, not merely from the surface. Attacks may be delivered by aircraft, which drop bombs ; or from submarines, which fire torpedoes. As regards the last, the modern torpedo does not necessarily run straight ; it can be made to circle, or to follow a zig-zag course, making evasion difficult when a group of ships are under attack ; or it may even automatically follow and "home" on the noise of the propellers of the target ship. Nor does the torpedo necessarily have to make a direct hit; it can be made to fire under some influence exerted by the ship, such as its magnetic effects, so that even a near miss may do much damage. Another enemy is the naval mine, "this most unpleasant of all weapons," of which more later. Even in harbour a warship may not be safe; it may be attacked by frogmen, who place explosive charges on its hull.

Once, the Admiral in a fleet action had to consider little more than the size of the enemy force, the state of the wind and weather, and his own degree of readiness. His modern successor must think of these things, too; but he must also take account of the possibility of air attack, the threat from submarines, the danger of minefields, and of his means of defending himself against them on the one hand, and of using them offensively against his opponent on the other. These additional burdens are the fruits of the technical revolution.

THE UNDERLYING PATTERN

The advances of the last century have not only made naval warfare altogether more complicated, they have tended to shift the emphasis from the individual seaman to his equipment. As soon as sails were replaced by steam and wood by steel it became necessary to provide the seaman with a ship whose engines were as powerful, whose armour was as thick, and whose guns were as heavy, as those of the enemy before he could fight on equal terms. Moreover, if he could be given a bigger and faster ship with thicker armour and guns of longer range, victory was almost certain. A time came when it was possible for one fleet to sink another without itself receiving damage or casualties ; this happened, to all intents and purposes, during the Spanish-American War, and at Coronel and the Falkland Islands. Under such conditions courage and skill alone are not enough; the seaman is no longer the major deciding factor in naval victory. It is the man plus his equipment which settles the issue. This is not to deny, of course, the extreme importance of personal qualities-in modern as in earlier wars ; the winds and waves are still on the side of the ablest navigators. The old proposition, that the moral is to the material as three to one, may well have been true. The crux of the matter is that now-a-days the three-to-one ratio is simply not high enough to offset the consequences of lagging behind in the march of technical progress.

Oddly enough, the Naval Powers which were most inclined to ignore progress in the past were those of major rather than of minor calibre ; though perhaps this is not so strange, when one recalls the innate human tendency to rest on one's laurels. But this is nevertheless a most dangerous attitude of mind, and one to be guarded against; more especially at the present time, when the technique of warfare is in a state of such rapid flux.

Instances are not lacking where the balance of sea power has been entirely reversed because of a new attitude towards old problems. A classic example is the naval war between the Carthaginians and the Romans of over two thousand years ago; when the Romans, previously purely a land power, rapidly succeeded in defeating the Carthaginians who had until then commanded the sea. The Romans owed their success ostensibly to the development of certain mechanical devices ; but actually to that alertness of outlook which caused them to realise that, to beat a navy more experienced in the old methods than their own, they would have to adopt a fresh approach to naval warfare. There is a warning here to all established sea Powers.

Similarly, in the nineteenth century, most of the effort to produce new weapons was initiated by the then smaller navies, in the hope that, by means of some entirely novel device, they might be able to offset the numerical superiority of their more powerful rivals. If, for example, a great battleship could be sunk by a simple weapon such as a mine laid in its path by a small fast vessel inexpensive to build and maintain, wherein lay the value of large fleets? The naval David, if he could exercise sufficient ingenuity, might at last find the means of standing up to Goliath ; and become capable of defending himself against the giant, even if not able to attack him.

The major naval powers tended at first to disregard the development of new weapons, though seemingly uneasily aware of their potentialities. Thus in the earlier part of the nineteenth century the British Admiralty found a variety of reasons for refraining from encouraging the development of naval mines ; the excuses ranged from a dislike of the ungentlemanly character of the new device to a fear that, if perfected, it would render the Royal Navy useless. It was many years before more balanced views prevailed. The mental attitude of their Lordships seems to have been based not so much on a failure to appreciate the technical possibilities of the new weapon as on an unwillingness to accept the necessity for modifying methods of fighting and lines of tactical thought which had served so well in the past. A similar reluctance was encountered, incredible as it seems today, during the transformation from sail to steam ; the arguments used at the time on either side may be read in the pages of Michael Lewis¹.

Another feature of modern naval warfare which sharply differentiates it from that of the past is that it is now possible for the Powers to design their navies to suit their particular strategic objectives. Navies are no longer all basically the same, differing only in size, as once they were. Naval warfare in World War II, as viewed through German eyes, was mainly a matter of U-boats, despite the existence of surface elements ; whilst the prime interest in Great Britain was in surface ships and anti-submarine work although a successful submarine war was being waged at the same time. Similarly, the U.S. Navy became modified during the course of the War in order to meet the necessity of fighting sea battles over vast ocean areas and of conducting triphibious operations against an enemy holding numerous scattered island bases. Thus strategy at sea need no longer be restricted by considerations of what it is possible or not possible to achieve

1. *The Navy of Britain*, Michael Lewis.

with a limited range of types of tactical units ; on the contrary, it is now possible for a country possessing the necessary resources to produce those types of tactical units which it needs to attain a specific strategic objective.

Yet another consequence of scientific development is the increasing dependence of ships upon instruments, not only for the purposes of extremely accurate navigation which present-day circumstances demand, but for fighting. One type of instrument—radar—gives warning of aircraft many miles away ; and detects hostile surface units, and lays the guns, too, so that ships can fight at long range in pitch darkness or thick fog and destroy enemies they have never seen. Other instruments can detect the approach of torpedoes, and hunt a lurking submarine to destruction, with perhaps only a stream of oil and a few bits of wreckage thrown up to the surface to give visible evidence of the skill. Naval warfare has, in fact, followed physical science into the world of invisible light, imperceptible heat and inaudible sound. It is curious to reflect that certain naval operations are now preceded by the taking of measurements which would have been regarded only a few years ago as of interest solely to research workers in a specialised field.

All these things, and many others, are now amongst the common-places of war at sea and are mentioned only because of the implications that they hold for the personnel who use them in action. Instrumentation has made naval warfare more machine-like and much faster. Nevertheless, in the chain of events leading from the first detection of the enemy to the hurling of destruction at him, the human operator is still the essential link ; but, it must be remembered, the other links in that chain are machines which, if properly cared for, cannot become weary, or inattentive, or make mistakes through excitement, or lose their nerve, as a man may do. The very link which is most vital is in danger of becoming, in fact in some contexts has already become, the weakest also. The combination of a man and a machine, as pointed out by Morse and Kimball² tends to behave much more like a machine than like a man; and we are being increasingly compelled therefore to study the behaviour of man not as a human being but as an integral part of a machine. Objective studies of mental characteristics such³ as reaction-times, powers of concentration, decision-taking ability and "instrument comprehension" have become in consequence highly important today. Thus the machine, having, as we have seen, largely displaced the individual seaman from his position of pre-eminent

2. *Methods of Operations Research*, Morse & Kimball

importance in naval warfare in one sense, is now in process of reestablishing his importance in another new and unexpected direction. This is because there seems to be a real danger that the machine and the instrument may become so complex as to baffle the man who is supposed to control and use them.

THE TECHNICAL BATTLE

The technical developments which have brought naval warfare to the form that it now possesses have, in the main, been long-term processes; the technician operated, as it were, on the strategic rather than the tactical level. Nevertheless, during some phases of World War II, the technician became deeply involved in certain tactical matters almost on a day to day basis ; this was practically the case with mine warfare. The war began with moored contact mines, that is, mines which had actually to be struck by a ship before they would fire. When the War ended both sides were using mines which were fired by the magnetic field exerted by a ship, or by the noise made by its propellers, or by the pressure difference created by the passage of the ship through the water. There were mines which could distinguish between the noise made by a ship and the noise produced by explosions. There were others which in order to complicate the enemy's minesweeping operations, would only fire when acted upon simultaneously by more than one of the ship-phenomena listed above; for example, the mine might be cocked acoustically and fired magnetically, reverting to safe if the latter influence was not experienced immediately after the former. The enemy's minesweeping techniques were studied, and mines were specially designed to take advantage of the defects found in them. Some were designed specifically to destroy enemy minesweepers. Others could be swept several times without firing, or would remain inactive for days or weeks before coming "alive"; both types were intended to inflict casualties in areas which the enemy, either as the result of repeated sweeping, or by the passage of time, would think had been rendered safe. "If you want a mine", said one scientist in a burst of enthusiasm, "which will only fire when somebody whistles '*Deutschland uber Alles*' near it, we will produce it"; and the thing is theoretically possible.

Long before World War II started, the magnetic mine was known to be a perfectly practicable proposition. How were ships to be protected against it? The first proposal was deliberately to create a powerful magnetic field round the ship, in order to explode magnetic mines at a safe distance away from it. Then it was realised that to counter this move, it was only

necessary for the enemy to use a coarse setting to prevent the actuation of the mine until the ship was close to it. (Actually, in the end mines of this type were used to destroy certain types of magnetic minesweeper, which operated by exerting a very intense field with the object of detonating magnetic mines at a distance). It was considered safer, therefore, to demagnetise all ships. This could be done in various ways; one well-known method is to fit "degaussing coils" round a ship, and by passing through these coils an electric current of the right strength, the magnetic effects of the ship could be cancelled out. The vertical magnetism of most U.K.-built ships was of the "north-pole-down" variety ; and in the early days, it was usual, as a supposed safety measure, to pass excess current through the ship's coils, thus reversing its polarity. The German reply to this was to modify the magnetic mine so that it could be fired by a "south-pole-down" ship. As soon as it was realised that this was being done, the Allied counter-move was to render their ships as magnetically neutral as possible. The enemy's response was to make his mines more and more sensitive. There was, however, a limit to this line of approach, since the more sensitive the mine the easier it was to sweep or destroy. Other possibilities were exploited ; acoustic mines were introduced, followed by combined acoustic/magnetic types, culminating in the pressure mine ; a weapon so difficult to sweep that for a time both sides hesitated to use it lest it interfere with their own subsequent operations. In parallel with all this, both sides gave deep thought to the corresponding defensive problems. A state was reached, on the Allied side, when counter-measures had been devised to types of mines which it was thought the enemy might produce, but which, in fact, he never succeeded in developing, or at least, never used. And so the technical battle proceeded ; a battle different from but no whit less real than that fought in anger on the seas.³

It was, in the nature of things, almost inevitable that scientific progress should affect the externals of naval warfare before it touched upon its theoretical aspects. Yet the latter stage was reached during world War II ; and it is beyond question that in another conflict still further advances would be made. It is a short and obvious step from the study of instruments and equipment to the study of how these things are used in action and the results achieved by them. The tendency, already noted, for a man plus a machine to behave more like a machine than like a man means that the behaviour of many men using many machines can be forecast with a considerable degree of accuracy. Many of the operations of modern war

3. *Mines Minelayers and Minelaying*, Captain J. S. Cowie, R.N.

are repetitive—one submarine hunt is very much like another, one bombing raid closely resembles the one before, and the one before that—so that the methods of statistical analysis can often be applied to them, sometimes with most illuminating results. Actual examples are too lengthy to quote, but a few can be outlined. How should the armour be disposed on heavy ships to best advantage, in view of the fact that these units are liable to receive damage from such widely different agencies as the bomb, the shell, the mine and the torpedo? Are merchant ships safer if concentrated in a few large convoys than if they are dispersed in a great number of small ones? What is the most economical method of employing aircraft to protect convoys against submarines? Ought they to be used to provide close support over the convoy, or to bomb the submarines in their bases, or to attack them whilst they are proceeding to their hunting grounds? Many such questions were asked during the last war, and the answers given by detailed statistical analysis were often not the apparently obvious ones. The great advantage of the statistical line of approach is its entire impersonality; facts and figures, not impressions formed by individuals who may be biased by recent and vivid experiences, alone can provide realism. Pure mathematics, too, has a far from negligible contribution to make to naval tactics; it can for example, calculate from probability theories the best search and patrol formations to adopt when covering a given area of sea with a limited number of searching units, or advise on the optimum width of swept channels through minefields, and on similar problems where exact mathematical analysis may lead both to an increase in efficiency and an economy of force.

THE CO-ORDINATION OF THE SCIENTIST WITH THE SERVICES

Historically speaking, efforts have always been made to apply science to warfare, which never fails to call forth man's ingenuity as well as his courage. It is even true that science itself has benefited greatly from recent wars in that technical and other needs arising from actual operations have stimulated an enormous amount of research that might otherwise never have been undertaken. In past ages various gifted individuals like Leonardo da Vinci in mediaeval Italy and Archimedes in ancient Greece made, or attempted to make, serious contributions to the warfare of the day; one Greek even developed a sort of poison gas generator. But apart from isolated cases of this kind, in the main science and technology were applied to warfare by professional sailors and soldiers themselves rather than by non-Service people. It was quite possible for this arrangement to persist and function satisfactorily until such time as science and technology reached a

certain minimum level of intricacy ; after that level had been reached—and it was reached about 50 years ago—it was no longer possible for the Services to conduct the application of modern scientific developments to warfare without the aid of professional scientists and technicians. The existence of the naval scientist today is simply the inevitable consequence of the complexity of the modern world; and the need which produced him is really no different from that which led to the creation of, for example, the Electrical Branch in the Navy.

Since scientific and technical developments have so profoundly modified naval warfare in the past, and will obviously continue to do so in the future, it is clearly necessary to ensure that proper co-ordination exists between the naval service and the research and development organisation. Most big advances in the technical field have been introduced only after much argument, toil and travail. We have seen, as a striking example, the hesitation to change from sail to steam ; and most of us have heard of the official prognostication of fifty years ago that “the aeroplane has no military value”. An even earlier instance is so typical of much that has happened since that it is worth quoting. The point at issue was the introduction of copper sheathing for the hulls of wooden battleships, with the object of preventing the accumulation upon them of seaweeds and other marine growths. These growths, or “fouling”, so seriously impeded the movement of the ships that the maximum speeds attainable were often reduced by perhaps fifty per cent after a few weeks or months. Obviously any navy which could remedy this state of affairs would obtain a great advantage over its competitors. Long afterwards, Sir Charles Middleton (later Lord Barham) wrote :—

“I was convinced in my own mind that we might with safety copper the bottoms of every ship in the fleet and by that means increase our activity, as far as doubling our force in numbers.....I proposed it privately to Lord Sandwich ; but he hesitated, and.....mentioned it to the King. I afterwards accompanied his lordship to Buckingham House and explained the whole process in so satisfactory a manner that he conceived it at once and ordered it to be carried into execution.....Admiral Barrington, amongst others, declared that the ships would sink at their anchors....”⁴ (Actually the innovation paid handsome dividends; copper-sheathed ships were able, by virtue of their clean hulls, and the increased speed resulting

4. *Select Naval Documents*, Hodges and Hughes

therefrom, to prevent the escape of enemy warships during the Moonlight Battle of 1780, and thus bring them to action.)

The case is interesting because of the way in which it illustrates the difficulties of introducing new techniques. We have the man with the idea, the official hesitancy, the appeal to higher authority, and the typical reaction of the Old School. But although it is easy to instance cases where progress has been hindered by conservatism in outlook, it must equally be admitted that sometimes the opponents of innovation have been entirely right: not all new ideas are useful, or even sensible. "The extreme ingenuity of this instrument," ran a report on a naval gunnery aid which was once being tried out, "rather blinds one to its absolute uselessness"⁵

We are faced by several difficulties here ; first, that the scientist is often quite ignorant of Service realities. Second, that unless given sufficient encouragement he will lack opportunities both for putting forward new ideas of his own and for trying them out—experimentation is the basis of progress in defence science no less than in any other branch of science, and even experimentation that is at times unsuccessful must be sympathetically accepted as a necessary evil. Thirdly, the Service Officer cannot be expected to be fully acquainted with scientific and technical developments, and therefore cannot, by himself, appreciate the potentialities lying hidden in the pages of scientific journals. (Who, in the Services, foresaw the possibility of the atom bomb?). Fourthly, whilst the scientist may at times be impractical, the Services are on occasion technically unrealistic ; demands for materials with mutually exclusive properties, as if an object were to be made both black and white at the same time, are not altogether unknown.

The only solution to these problems, which are very real, and, of course, confront the Army and the Air Force as well as the Navy, is the closest possible co-operation between the user on the one hand and the designer, technician or scientist on the other. The process of devising a new weapon or item of equipment is essentially a team effort involving Service people, scientists, engineers and designers; and the team is unbalanced unless all elements are equally represented. Indeed, the best method of integrating scientific and technical personnel into the war-machine is one of the more difficult administrative problems raised by the technical revolution of the last two or three generations. Since, as we have seen, it is now often possible to design one's forces to suit one's strategic ends rather than

5. Quoted by Admiral of the Fleet Viscount Cunningham of Hyndhope in *A Sailor's Odyssey*.

to be limited in one's strategic aims by the type of forces available, it seems clear that, ideally speaking, the scientific and technical element should be embodied in planning organisations at a very high level.

The need for adequate co-ordination between the research elements and the Services is greatly accentuated by the fact that research and development work is usually, by virtue of its very nature, a lengthy and expensive process ; and the more fundamental it is, the slower and more expensive it is likely to be. Therefore, defence research requires planning in advance on a long-term basis. It may well be too late if one waits until the shooting starts. But before serious planning can begin, a realistic appreciation must have been made of the probable course of future events; and the scientist and technician must therefore be taken fully into the confidence of the Services as regards such forecasts if they are to be able to think, as they ought to be thinking, five or ten years ahead.

SERVICE RESPONSIBILITIES

It remains to emphasize that, however great the responsibility of the scientist and technician may be as regards research and development, the responsibility for the correct use of new weapons rests entirely in the hands of the Services themselves. A new weapon will not, in itself, bring victory ; it must be used at the right time, and in the right place, and in the right numbers. It would be a grave mistake to employ a new weapon tentatively or experimentally, because if it is used in this way, the element of surprise is lost, and the enemy may, if he is sufficiently alert and technically capable, be able to seize upon the idea and imitate it himself. An example of an error of this kind, taken from the context of naval affairs, was the way in which the Germans used the magnetic mine in World War II. The idea behind this device was known to the Allies, who had in fact developed one themselves years before, and they fully expected the Germans to use a weapon of this type. But certain information relating to the sensitivity of the German mine was lacking and had to be obtained before defensive measures for shipping could be perfected. However, when the time came the enemy used the mine in small numbers and laid them by air in shallow estuaries so that, before long, it was possible for the Allies to retrieve an undamaged specimen and unravel its secrets. The German Navy also laid a few from submarines in deeper water, but none of these were recovered. There is little doubt that had the enemy proceeded differently, and waited until he had thousands instead of dozens, and had laid them by submarine outside narrow waters, he would have scored a much greater success.

A further responsibility which rests with the Services in connection with the use of specialised weapons and equipment is that of ensuring that training procedures are adequate, and are validated by systematic checking against the results obtained in practice. The benefit to be derived from a device may be lost unless as much attention is paid to this as to the other factors, technical, tactical or strategic, which govern its employment in war. The newer and more revolutionary the equipment, the greater the importance of an imaginative approach to the training problem. The effects of a modification in training methods are sometimes striking ; a good example is quoted by Morse and Kimball⁶, which although referring specifically to an Air Force matter, contains conclusions which are, of course, equally valid for the sea and land Services. The problem was that of increasing the accuracy of strategic bombing, a process which involves the destruction of small pin-pointed targets. Briefly, it was found that withdrawing operational bomber crews (crews, that is, who had already undergone the amount of training considered sufficient) from active service for a while, and putting them on to further bombing training led to an increase in accuracy which was nearly sixfold. Whilst certain other factors were involved, the increase in accuracy was mainly due to the additional training given. Although several lessons can be learnt from this instance, the most important aspect of it seems to the present writer to be that an increase in efficiency of this order is comparable to that which might have been expected to result from a major improvement in the design of bomb sights. Or, to look at the matter from another angle, it is of the highest importance that before we embark upon the design of new devices we should make quite sure that we cannot obtain equivalent results by a better use of existing equipment ; the study of training procedures being an essential feature of this process.

Another error that has sometimes been made in the past is that of expecting a new device to possess a degree of efficiency above and beyond its inherent capacity. Accounts of night actions between Japanese ships, not carrying any form of radar, and American or Allied vessels equipped with early types of radar sets, shew that on occasion the Japanese opened fire before their opponents. It is not to be believed that this was because the Japanese possessed markedly greater visual acuity than the Allies ; the probable explanation lies in the mental attitude of the latter who, the limitations of the relatively crude radar sets then available not having fully

6. *Methods of Operations Research*, Morse & Kimball.

registered with them, placed—possibly entirely subconsciously—too much reliance upon them.

EPILOGUE

Naval wars of the future will undoubtedly follow the path signposted in World War II : the path of new devices and new—possibly in some ways radically new—methods of waging war ; of ever-increasing complexity of equipment, calling for greater and still greater knowledge and efficiency on the part of the men who use it, and of much more intensive efforts to train them. Naval warfare, already greatly dependent upon instruments, cannot fail to become even more so. The naval scientist, technician, and designer will inevitably play a more, and not a less, important role than he has played in the past. More than ever before will it be necessary for him to understand and appreciate the needs and the difficulties, the methods and the objectives, of the Navy ; and more than ever before will it become essential for the naval officer to be alive to the potentialities, and yet at the same time to realise the limitations, of what science and technology can do for him ; both working together towards the same end, that the technical battle may be planned and fought with maximum efficiency.

THE ARMY RESERVE

COLONEL P. S. BHAGAT, V.C.

THE Reserve of the Army in India was formed in 1880 soon after the amalgamation of the East India Company's three Armies.

The conditions, pay and privileges then obtaining in Reserve are in the main still in force today.

The object of the Reserve was twofold :

- (a) By shortening the colour or regular service, there was a greater turnover of trained personnel.
- (b) It provided a pool of trained personnel, who though not on the regular strength were readily available for expansion in case of emergency. The immediate purpose of the pool was to bring units and Training Centres from Peace to War establishments and provide the initial reinforcements for the active units.

Since the inception of the Reserve in India, two World Wars have been fought and the principle of compulsory Military Service and Conscription has been accepted in Western countries. India has also changed from a British possession to an Independent Republic, responsible for its own defence.

The Army in India today is rapidly changing to a peace-time Army and the formation of a Reserve has been envisaged. It is thus an opportune time to review, in the light of the changed circumstances, the necessity, size, and terms and conditions of the Reserve.

TERMS AND CONDITIONS FOR THE RESERVE

The types of Reserves in the Indian Army were :—

I. Regular Reserve consisting of:

- (a) Regular Army personnel sent on Reserve after a period of colour service.
- (b) Drivers and certain other artificers enrolled directly into Reserve.

- II. Supplementary Reserve: Made up of a pool of drivers and artificers not required to do any training in peace. It consisted of two categories of personnel:
- (a) Those required to take a trade test in peace.
 - (b) Those not required to take any test in peace.

For the purpose of this article only Regular Reserves who are sent on Reserve after colour service will be considered.

REGULAR RESERVE

The Regular Reserve strength varied between 20 and 30 per cent of the strength of the Regular Army.

The personnel had to do seven years' colour service and 8 years in the Reserve.

The Reserve personnel were required to do training varying from one month to two months biennially and some categories one month annually.

The pay during Reserve period varied between Rs. 5/- and Rs. 7/- a month, with a pension of Rs. 3/- a month at the end of 15 years' total service. The new Pay and Pension Code has so far not been finalised for the Reservists.

FACTORS WHICH INFLUENCED THE RAISING OF RESERVE BEFORE INDEPENDENCE

The strength of the Indian Army was based on:

- (a) The Internal Defence Requirements in India, including the North-West Frontier.
- (b) Commitments in Imperial Defence.
- (c) The strength of the British Garrison in India. (For security reasons it was necessary that sufficient British Troops were available to put down any insurrection in the Indian Army).

Thus it will be seen that apart from economic reasons, the strength and role of the Regular Army was restricted because of political and security requirements.

Similarly, the size of the Reserve was also limited. It was considered unsound to have a large Reserve on whom there was little control. Moreover, in any major war, because of other Imperial Forces, it was envisaged

that sufficient time would be available to raise an Army to meet the additional requirements. This was done successfully in both the World Wars. The Reserve provided only the initial requirements to change the Army from a Peace to a War footing.

The recruitment of the Indian Army was restricted to rural areas and was primarily from the land-owning classes. Their loyalty was ensured as these classes owed their existence to the British Government. Their lands in the majority of cases were given for their services in the Army and elsewhere.

The attraction of Service in the Army was not so much the Pay and Pension, though they were adequate for those days, but the prospect of land grant after the service. Ex-Servicemen were also given special consideration and respect in their villages.

Thus a class of people grew up who were completely loyal to the Government. Their mainstay in life was land, and service was only for respect and as a proof of further loyalty to the Government.

FACTORS AFFECTING THE RESERVE SINCE INDEPENDENCE

The Strength of the Army and the Reserve

With Independence the commitments of the Indian Army have also increased. No longer can India, at least in the initial stages, depend upon foreign help and protection.

Our Standing Army should therefore be so organised as to :—

- (a) Provide a screen behind which large-scale mobilisation can take place. This entails a strength capable of holding the enemy for the duration of the mobilisation or till foreign aid reaches India.
- (b) Provide the necessary staff and Instructors for training and organising the increased strength of the Army.

It is obvious that India at this stage cannot afford a Standing Army to carry out this role. The present Reserve strength also does not cater for these commitments.

Further the strength, training and role of the Territorial Army does not allow it to be used as first-line troops for the defence of the country. At best they can take on the Internal Defence commitments from the Regular Army and be used as L of C troops.

It is therefore essential that some form of Reserve or pool of manpower is available not only to bring the Peace-time army to a War footing but also to bring it up to the essential minimum required for the initial defence of the country.

Conditions of Service

It has already been pointed out that the Army before Independence was entirely recruited from the rural areas and from people who had proved their loyalty to the British. After Independence it was but natural that recruitment to the Army should be thrown open to all. This, together with the changing economy of India has resulted in the Army getting recruits from all parts of India, including those not dependent on agriculture as their main livelihood. This change in the composition of the Army has already been recognised and hence the terms of service and pension of the rank and file of the Army has greatly been enhanced. The terms of the Reserve, however, have yet to be worked out, but the formation of the Reserve on the same lines as before has been ordered.

Whatever the terms given to the Reserve personnel, they can never allow for the Reservist to maintain himself on his pay. Not having land to fall back on, the Reservist in many cases will have to seek employment elsewhere. In this he will suffer from considerable disadvantages compared to the civilian. He is required for a period of training regularly, be it annually or biennially, and in private industry this absence is not appreciated.

The Reservist has spent his early years in a profession not connected with his civil employment, whereas his civilian counterpart during the same time is learning the trade, establishing himself and rising in it.

From experience of the present personnel going on Reserve it has been found that to secure jobs for a normal person is difficult, and for a Reservist with his commitments it is nearly impossible.

The other attraction of getting a reward in the shape of Land Grant, or preferential treatment to Ex-Servicemen is also out of the question in a democracy.

Need for a Larger Reserve

Thus it will be seen that both from the point of view of numbers and conditions of service, the present system of Reserve in India is outdated and unsuitable.

It is, however, essential that some sort of system is adopted which will give us increased numbers, as well as favourable conditions to the Reservists, without unduly increasing the financial commitments.

COURSES OPEN

(a) For maximum security it is obvious that conscription or compulsory military service in Peace time, with arrangements for calling up the desired number of people in an emergency, will have to be introduced. India, however, has neither the organisation nor the means to train and equip such a vast number. Other alternatives are,

(b) To maintain a large standing army capable of taking the initial brunt as is envisaged by the Western Powers today. This again owing to economic reasons is not possible in India.

(c) To adopt the Chinese pattern of having vast second-line armies paying their way by undertaking nation-building projects. In a democracy this obviously cannot be tolerated.

(d) To adopt the Swiss pattern, where only a minimum nucleus of permanent staff is kept for organisation and continuity of training. The rest of the Army is found from the population, who are obliged to train for military service in their own time. This course in India suffers from the same drawbacks as compulsory military service.

(e) To follow the system adopted by the German Army before the Franco-Prussian War. The system was designed in order to save expenditure on defence in Peace time, but at the same time to have comparatively large Reserves for an emergency. The conditions in Germany then obtaining were similar to those prevalent in India today. The Army was for the defence of the country rather than for aggression. Germany was changing from an agricultural country to an industrial one. The country could not afford a large standing army, and at the same time, because of European conditions it could not depend on a wholly part-time one. In the main the Army was made up as follows:—

A Regular long service army with a minimum strength necessary for peace commitments and to provide the hard core for expansion.

Short Term engagement personnel who did two/three years' service with the Army. They were then transferred to the Reserve Pool for a period depending upon their age and arm

of service. The strength of the Pool and therefore the recruitment of the short term service personnel was based on the defence requirements of the country.

The three years' period was laid down in order to give them full military training and some experience in units. They were not likely to be called up in peace and hence were merely given a retainer during peace time.

The advantages of the German system are at once obvious. Without unduly increasing the size of the Army and thus the expenditure, but by merely increasing the turnover of trained personnel, the size of the Army for emergency was greatly increased.

The period was short enough so that the normal trend of civilian life of these personnel was not unduly interrupted, and was long enough for proper training and some experience in the Army.

There were, however, a few drawbacks :—

It took time to mobilize and train the new army units. The long term Regular personnel were milked from their peace-time units to create new units. This time, however, can be reduced by good organization.

The personnel of the Reserve Pool, especially those who are at the end of their period of Reserve, are out of touch with the Army. In practice, however, as it was found in the last war the short training given to our Reserves during Reserve period was not a great advantage. They had to be given a Refresher course. Reservists who have had no training during Reserve period may possibly have to be given a slightly longer period of training than before.

The Army got little return in peace time for the training of Short Service men. Up to 50% of their time in the Army was spent in training and hence they were only available for a year with units. Thus the proportion of trainees to trained soldiers in the Standing Army was large. This is a major drawback in peace, but at the same time it must not be forgotten that the primary role of an Army is in War.

Thus it will be seen that, by and large, apart from the advantage to the country of having a large army in an emergency, the personnel in the Army are also benefitted. This will only be so, provided the Reserve

Pool personnel's two years' service in the Army is recognised, for purposes of antedating the waiting lists in the Employment Exchanges, for Government service, and private industry.

RESERVE PLAN

It is beyond the scope of this paper to suggest the strength of the Army and the Reserve. The most that can be done is to work out the proportion of the Standing Army to the Reserve.

Further, the Reserves dealt with in this article are for the rank and file and not for Officers, JCOs and NCOs. They will of course be required in large numbers for expansion. The question of JCOs and NCOs is relatively easy as the aim of a peace-time Army is to train their personnel one, if not two ranks above their peace rank.

The question of finding junior officers is more complex and is beyond the scope of this paper, but some arrangements for keeping a lien on NCC Cadets for a period after their training can well be the answer.

STRENGTH OF SHORT SERVICE PERSONNEL AND RESERVE

There is an optimum limit to which Reservists can be introduced into the units of the Army and still be considered fit for operation. This limit it is felt should not be more than 50% of the total strength. Thus on this basis the maximum strength of the Reserve should be the same as the strength of the Standing Army.

Another factor which limits the strength of the Reserve is the period of Reserve. It is considered that the effect of military training will last for eight to nine years. Beyond this period it is felt that the Reservist will require complete re-training.

Thus from these two factors the proportion of the Short Service men to Regulars can be determined as under:

Total Reserve equal to the strength of the Standing Army	=	X
Yearly output into the Reserve	X	
	=	<hr/> 8
Strength of Short Service men incl. those under training, if embodiment period is two years	X	
	=	<hr/> 4

Therefore, at any one time the strength of Short Service men will be 25% of the Regular Army strength.

TRAINING

The Short Service men should do two years' service with the Army. This to include:

- (a) A period varying from 6 months to a year, depending on the Arm of Service, for recruit training.
- (b) Remainder with active units engaged in training.

There will be no training for Short Service men during the period of Reserve, but on embodiment, Units will carry out three months' intensive individual and collective training up to Unit level if time permits.

RECRUITMENT AND TERMS OF SERVICE

Recruitment standards should be the same as for the Regular Army. In order to attract suitable recruits it is essential that some facilities or arrangements are made for their future. Suggested facilities are:

- (a) Proportion of posts reserved in Police, Watch & Ward and other Government Departments where Military training is helpful. This will help the men as well as be a financial saving to the Government. In fact, if required, the Police or other departments may select the personnel and send them to the Army, provided of course they are medically fit.
- (b) A certain number of vacancies up to 10% in the Regular Army to be reserved for Short Service engagement personnel.
- (c) Seniority of six months in Employment Exchanges for jobs in civil employment.

The pay of the Short Service personnel during their engagement in the Army is to be the same as for the Regulars.

For the period of Reserve a yearly gratuity should be given. This will help in keeping trace of the personnel. The amount to be fixed would depend on the finances available, but it is suggested should be 50% of what is intended to be given to the Reservist at present. This will not increase the financial commitments on the Reservists as the Short Service Engagement personnel will not be entitled to pension.

FINANCIAL IMPLICATION

The new system will be more expensive, if the strength of the Regular Army under the present system is kept at the existing level, because of the

larger number of recruits at any given time. The extra financial commitment can be reduced by reducing the strength of the Army proportionately. The reduction will be amply compensated for by the extra numbers in the Reserve.

Another method of reducing the expense is by increasing the length of service of the long term personnel from 15 years to 18 or 21 years, thus reducing the number of pensioners and recruits.

CONCLUSION

The basic principle of the Short Service personnel's engagement is that the length of service is long enough for him to be properly trained, but short enough so as not to interrupt his civil career unduly. Moreover, there will be no training commitments during the Reserve period in peace time to handicap the Reservist from securing employment in Civil life.

For the country the benefit is obvious. A bigger army in an emergency with no extra financial commitment. The loss in the training period during Reservist service is compensated by having younger men in the Reserves.

For the scheme to be a success it is essential that some incentive is given for Short Service enlistment. Certain suggestions have already been made in this article.

DYNAMIC NEUTRALITY

COMMANDER N. KRISHNAN, D.S.C., I.N.

IN peace time, strategy is the servant of policy subject to the limitation that our policy must not lead us to a situation which is too much for our strategy to support." It is obvious that the aspiring strategist must be absolutely clear in his mind as to what the policy of his Government is, its whys and wherefores, and if his ideas of strategy are consonant with the National Policy. We, in the Services, know our task in peace to be that of preparation for War—the building and maintenance of strong and efficient forces that would be capable of continuing policy by 'other means' if peaceful methods fail. We can fulfil this task infinitely better if we are clear in our minds as to what this peace-time policy is. We have heard of our foreign policy referred to as one of "Dynamic Neutrality". What exactly is Dynamic Neutrality? Does it justify the vast expenses involved in the maintenance of strong defence forces, in times of peace? The aim of this article is to provide the answers to these two questions.

It is India's declared intention to follow the paths of peace in the solution of all her problems. Because of a misunderstanding of this, the logic of having strong armed forces has often been questioned, at home and abroad. "If you wish to apply peaceful methods to all your problems and be neutral whilst others fight, where is the necessity for a strong Navy, Army and Air Force?" Such a line of thought at home is fraught with obvious dangers. Abroad, it breeds suspicion and a questioning of our bona fides and intellectual honesty.

In professing peace as the mainstay, the structure and the very foundation of our foreign policy, we are repeating the need and heartfelt prayer of the common man throughout the world. And yet, the quest after peace is a national article of faith with us because of certain specific and over-riding factors peculiar to us and our way of life.

In the long and ancient annals of this country there is not a single instance when India waged an aggressive war beyond her frontiers for the

imposition of her will upon a recalcitrant neighbour. She has been called upon many a time in her history to defend her hearth and home, her faith and her principles. She fought the invaders, forgave them, fraternised with them and assimilated them into her heterogeneous body. But there is no evidence of her waging war for any causes, religious, political or economical, that history can brand as aggressive. How then can we abandon the policies of centuries, the heritages of history and seek War as a solution ?

Coming to contemporary times, we have accepted as our national leaders those who have spent the major part of their lives struggling to uphold the principles of peace, truth and non-violence. Can they suddenly forget the lessons of a lifetime, divorce themselves from their past and start the strange tradition of deliberately leading the country to war ?

The immediate and over-riding problems that face us today, that demand solution at the peril of national extinction, have the foremost claim on our undivided attention. The spectre of famine is never very far away and awaits every vagary of man and nature to stretch its ghastly arms in deadly embrace. The per capita income of the Indian is so low that existence to many is a horrid nightmare. The ever increasing population and the refugee problem have created and continue to present serious difficulties that must be overcome and overcome quickly. True that our economic maladies have always existed in a greater or lesser measure, but their cure has suddenly assumed an alarming degree of urgency. The virus of this malignant disease cannot be destroyed by sabre-rattling or bullets but by striking at the very roots of the evil, *i.e.*, by the sterilisation of the economic evils that afflict the land. India today is embarking upon this venture and the first five year plan is a beginning in the assault against famine and pestilence, poverty and disease, superstition and ignorance. In this undertaking we need and seek the co-operation, goodwill and friendship of all nations of the world under peaceful conditions. War has no place in the scheme of our nation's progress.

The preservation of the sovereignty and integrity of our new Republic and the upholding of our national right to the economic and social systems best suited to our needs are the main factors that will determine our foreign policy at all times. We believe that the cultivation of reasonable and friendly relations with foreign powers and the active support of the United Nations Organisation offer the most reasonable chances of achieving the above political end by peaceful means.

“Unhappily in the world today, it is not nearly enough to desire peace. One has to have the grit, the determination and the strength to keep the peace and sometimes to make others keep the peace”. This is a quotation from a speech by our Prime Minister on board the Indian Navy's Flagship.

In other words, we follow the moderate course in the field of diplomacy avoiding taking sides in power politics, or being drawn into Power Blocs, but ever lending our weight in the councils of the world on the side of peace with honour. If, however, circumstances necessitate our taking up arms to preserve national safety, integrity and honour, we should be ready, willing, and prepared to face and overcome every danger. This, in essence, is what is meant by “Dynamic Neutrality”. In a world of warring passions, ideological extremes, exploitation, iniquity and injustice, the balance has a constant tendency to tilt towards War and history has shown what great conflagrations can result from the tiniest of sparks. National egos being what they are, there can never be any guarantee that the sparks will not fly. And when they do, it becomes our duty to try to isolate and limit the fire and prevent its spreading. In spite of our efforts, however, War may assume global dimensions and our country may be drawn inexorably into the holocaust. We should never be caught in the position of flotsam and jetsam in the current of war but have sufficient strength and determination to join hostilities in keeping with our national interests and honour.

Dynamic Neutrality thus involves a changing and adjustable policy whose consistency lies in the preservation of peace, to the point of equity, justice and honour. Being dynamic, it has to change with circumstances and may follow a pattern according to the following broad principles:—

- (1) India desires and requires peace and wishes to establish and maintain cordial relations with all nations regardless of colour or creed.
- (2) She believes that the grouping of nations for warlike purposes and the creation of power blocs create conditions that would prejudice the preservation of peace and hence would not join such groups or blocs.
- (3) She further believes that by following an independent line in her foreign policy, she may be of some use in keeping the doors of negotiations and understanding open between opposing powers.

- (4) She will strive to uphold the United Nations Charter and will work for its strength by pressing for inclusion of all countries in this organisation for peace and progress.
- (5) In the event of War breaking out, her policy will be to limit it and prevent its spreading. In order to effect this, she will be ready to fight, if necessary, in a cause that is worthy of her national interest and honour, but the decision to fight would be hers and hers alone, and she would be prepared for "Armed Neutrality" if necessary.

Thus "Dynamic Neutrality" as a policy includes all other types of neutrality ranging from "strict neutrality" through "armed neutrality", and "benevolent neutrality" to active participation in a War. The dynamism consists in the application of policy to the principles and the circumstances affecting them.

The instrument for the proper application of the above policy as well as for our defence against aggression is the Armed Forces of India. Mere enunciation of policy is meaningless unless we have the strength to implement it. In spite of our ardent desire for peace, therefore, the maintenance of our Defence Forces in the highest state of efficiency is not only entirely consonant with our national policy but essential to our very existence.

THE HYDROGEN BOMB

ITS POLITICAL AND MILITARY CONSEQUENCES

FLIGHT LIEUTENANT D.R. SETH, I.A.F.

ON March 1, 1954 the first Hydrogen bomb was exploded by the United States at Bikini in the Pacific.*

"We saw strange sparkles and flashes of fire, sparks and fire as bright as the sun itself. The sky around them glowed fiery, red and yellow. The glow went on for several minutes—perhaps two or three—and then the yellow seemed to fade away. It left a dull red, like a piece of hot iron cooling in the air. The blast came about five minutes later with the sound of many thunders rolled into one. Next we saw a pyramid-shaped cloud rising, and the sky began to cloud over most ominously."

This is what an eye-witness saw from a distance of seventy-one miles from Bikini.

REPERCUSSIONS

The explosion at Bikini ushered mankind into a new era as its thunder reverberated through the world. The first reactions were those of utter confusion. Nobody knew what had actually happened. Everybody was aghast at the monstrous new weapon. Some thought that the world might be set ablaze if the experiments were continued.

The first voices of protest were raised in Japan. In the press as well as in the Diet a hue and cry was made asking that further experiments should be stopped as Japan was dangerously near the proving ground. An edge was given to this demand by the injuries suffered by some Japanese fishermen from radioactive ash.

In Australia Mr. Evatt, the Leader of the opposition in the Federal Parliament, demanded that the experiment be stopped. In the House of the People Prime Minister Nehru mingled his voice with the chorus of

*According to a Report from the Chairman of the U.S. Atomic Energy Commission, a prototype was tested at Eniwetok in 1952, and in August 1953 the Russians also tested a device which derived part of its force from the fusion of light elements. (Ed.)

disapproval and wanted not only that further experiments should be stopped, but also that this new weapon be banned.

In the British House of Commons Mr. Attlee made a motion calling upon the government to ask the United States Government to stop further experimenting and suggested that the great Powers should get together immediately to find ways and means of saving mankind from total destruction by the use of the new weapon in a future war. He eloquently pleaded that "warfare between states armed with the H-bomb will be succeeded by a broken-backed civilisation."

Sir Winston Churchill in replying to the debate took a more sober view of the whole thing. He said that the British Government could not ask the U.S. Government to stop something to which they attached great importance. He maintained that there was no foundation to the suggestion that the explosions were "incalculable" in the sense that those making the experiments were unable to set limits to the explosive power of the bomb or to calculate in advance what the main effects would be. He was of the view that the H-bomb could be the biggest deterrent to World War III. It might well prove to be the greatest force for peace in world history as starting a war might mean national suicide.

THE AMERICAN VIEW

To the Americans the invention of the H-bomb is just another stage in the development of the weapons of war.

A study of the American press reveals that they do not understand the jittery feeling in the rest of the world. They emphasise that the military strength they are trying to build up had the prime objective of preventing another war. They feel that the last two wars would never have happened if the Germans had been convinced of the potential military strength of those whom they attacked. They were misled into thinking that they could get away with aggression. The Americans, therefore, do not want to leave any doubt for the future. They look upon atomic weapons not as weapons of offence but as instruments of peace.

Mr. Dulles, the Secretary of State made the following statement in a recent press conference :-

1. The United States does not intend to turn every little war into a general atomic war, but it does intend to use the threat of "massive retaliation" as a deterrent.

2. The H-bomb will make for peace by letting an aggressor know in advance what he can hope to gain.

DISARMAMENT PROSPECT

Both Sir Winston Churchill and Mr. Dulles have said that the H-bomb is an instrument of peace. If this does not help in bringing about peace in the world nothing else will.

Peace can be ensured only by all the Great Powers in the world agreeing to disarm. The attempts made in the past to bring about disarmament did not bear fruit due to mutual suspicions. But since March 1, things have taken a different complexion. Now that the world has been brought face to face with new dimensions of destructive power, the possibility of an international settlement for peace should be greater, and a fundamental change in the direction of disarmament easier. The pursuit of conventional power politics is fraught with great risks and the quest for some unconventional alternative which will ensure peace is urgently called for.

There is need for a calm and realistic appreciation of the situation of the world today, a situation where civilisation is in great danger.

So much about the political repercussions and the prospects for the future.

Let us now turn to the military consequences of the H-bomb and see what effect it will have on warfare and the shape of the armed forces.

MILITARY CONSEQUENCES

Mr. Strauss, Chairman of the Atomic Energy Commission who was present on the scene of the explosions on March 1, and March 26, stated in an interview that "information highly important to national defence has been derived from this series."

Mr. Wilson, the Secretary for Defence, stated in the course of a press conference on March, 31 that the results of the latest H-bomb tests were incredible."

The atomic weapons, and especially the H-bomb, are bound to have far-reaching military consequences. They will change the shape of war. Military thinkers are already talking and planning a "New Look Strategy."

The shape of war has been changing rapidly during the 20th century. Wars during the 19th century were a series of battles. The first world war

developed into a struggle for lines. The second world war was a war of areas, and was lost and won in the air. The war of the future might be one of continents. This continuous change of shape necessitates a change in the organisation and form of the fighting forces with which wars are fought. Before 1940 the Allies made the tragic mistake of preparing for a war of the 1914 vintage. They had to pay dearly for this mistake. It would, therefore, be foolish for any country to prepare for a future conflict in accordance with the blue-print of the last war.

THE "NEW LOOK" IN DEFENCE

The new defence plans recently formulated in the United Kingdom and the United States are an attempt to conform to this changed shape of weapons. The immense amounts of money spent on research, development and the manufacture of atomic weapons and the long-range bombers to carry them, have to be looked at from this angle.

They believe that the deterrent will prevent another war from breaking out. The punishment that could be meted out to him will make an aggressor keep his fingers away from the trigger.

There is another aspect to this new policy. And that is financial. Defence with conventional weapons would mean building up and maintaining massive armies with their supporting air forces; a vast number of ships, vessels and aircraft to secure sea-communications; and air defences—anti-aircraft and fighter defences—on a scale which proved to be necessary in the last war. The cost of building up military strength on these lines would bankrupt any country, without providing a deterrent to aggression.

In this new age of long-range jet bombers flying at 600 plus miles an hour, the defence of a country has become a problem well-nigh impossible to solve. The advocates of "New Look" have, therefore, concluded that the best defence lies in the threat to take offensive measures.

THE SHAPE OF THE ARMED FORCES

The new shift of emphasis to bombers and A and H-bombs will necessarily have a tremendous effect on the shape of the armed forces in the future.

The H-bomb enthusiasts hold that a land army will no longer be required, because they could tell a potential aggressor that he will be bombed to hell and high heaven if he transgressed certain limits. They only

grudgingly concede that a small army might be needed for psychological reasons, geographically placed to force the enemy to mass his armies into targets for atomic weapons. This army will not be required to fight battles as the new bomb can be employed tactically against troops, destroying or crippling entire divisions. Mobile ground warfare will be a thing of the past.

The navy too, like the army, would be reduced to insignificance.

Is this a correct evaluation of the new weapon? Not entirely.

Lord Alexander, when introducing the White Paper on Defence in the House of Lords, a few months ago, rightly maintained that the army and navy will not be neglected; that these will be reorganised and better equipped to provide more striking power. Mr. Dulles, recently said more or less the same thing. "The U.S. has not decided that the air-atomic power is its sole weapon. In the new military budget are funds for the biggest Army and Navy the U.S. has ever maintained in peace-time."

The view that a one-weapon strategy is envisaged, is far from true. The armies and navies will be needed, though not in the same form and numbers. They will lose the importance they have enjoyed so far and the bomber forces will become the "Cock of the field". But although a soldier may no longer be the ultimate determinant of victory, he will be needed to clear up pockets of resistance and take over government centres after the air force had destroyed the enemy with nuclear weapons.

The Army will be needed for limited wars as well as global wars.

But army organisation will take a different form. Army units in future will be smaller as ground warfare will become a more dispersed affair, so as not to provide a target for atom bombs. The units will be more mobile, perhaps every soldier and every item of equipment will have to be carried by air and dropped or landed at required places. Better training in leadership will be required of officers and better skill from individual soldiers. All this will be necessary as the main role of the army will be to provide small, highly mobile combat units which could be formed into bigger ones for deployment by air or sea.

CONCLUSION

The advent of the H-bomb has shaken both the politician and the planner. The world is faced with death and destruction if the new monster

is not kept in check. To do so cool heads and clear minds are necessary. The best way to do it is to create a climate where its use will not be called upon. The nations of the world must get together to create such a climate.

The military potentialities of the new bomb are tremendous. It will revolutionise warfare. It will change the shape of the armed forces and the old principles of strategy will no longer be applicable.

Although the effects of the bomb are not incalculable its deterrent effects cannot be exaggerated. It has no doubt limits. Small-scale hostilities could be started in the confidence that the bomb would not be used for fear of broadening the conflict. But the bomb will certainly prevent small wars from becoming big ones.

WHY STUDY INTERNATIONAL AFFAIRS ?

M.S. RAJAN

IN an important book published some time ago, *India in World Affairs*, 1947-1950, the author, K.P. Karunakaran, a Research Associate of the Indian Council of World Affairs, comes to the conclusion that during the period covered by his study, public opinion in India followed, rather than led, the Government on foreign policy issues. The unhealthiness of this tendency in a nascent democracy cannot be exaggerated.

Part of the explanation for this absence of active and widespread public interest in international affairs is, of course, that as a nation we are new to international responsibilities, even though our concern for international developments is much older than our independence. Perhaps, we need not be apologetic on this account, because there is a surprising amount of ignorance regarding international affairs even in countries which are much older to international responsibilities than us.

Some of us are apt to take a very narrow view of our interests and obligations. In the course of my work as an officer of the Indian Council of World Affairs, I have often to seek the support of the business community. Quite often, the Managing Director of, say, a textile mill would ask me, as though the answer is self-evident, ".....but what has the mill to do with your work on international affairs?" My answer to this is that in the last resort, international affairs is concerned with the maintenance of peace and prevention of wars, and apparently a war involving the country affects deeply and adversely industry and trade, and any business cannot escape unaffected by the repercussions of war. Therefore, business men ought to have quite a direct commercial interest in international affairs. Quite apart from this, while not pretending to give a mill or a business firm *quid pro quo* benefit, the Indian Council does work of considerable public benefit and indirectly promotes our national interests and is therefore entitled to the support of a profit-making business concern.

There are, then, quite a few cynics among us who think that it is presumptuous for anybody who has not mastered *internal* affairs to interest himself

in *international* affairs. The cynics would say somewhat like this: "Well! we have not solved so many of our internal problems—poverty, disease, illiteracy, unemployment and so on and so forth. If we cannot solve our own problems, is it not sheer impertinence to interest ourselves in others' problems?" They obviously think that interest in one field somehow conflicts with interest in the other or that internal affairs and international affairs are on two different levels, so that unless one succeeds in climbing the lower rung of the ladder, one cannot expect to climb the higher one. This mistaken view is obviously based on the erroneous presumption that interest in international affairs is somewhat of a luxury for a nation. The fact is that no sovereign nation today can lead an isolated existence and, whether it likes it or not, it is apt to be drawn into the vortex of international affairs; the rather ostensible exception of Switzerland to this proposition just proves the general rule.

Some of these cynics have a single panacea for all our ills. One of them once forthrightly told me: "I tell you, greater production is the most pressing and essential need of our country; everything else is secondary. You people are wasting your own time and energies and also diverting public attention to less important things. Our slogan ought to be 'produce or perish!' The briefest reply to this cynic is, of course, that man does not live by bread alone.

There is one other kind of cynic: "Apparently, you people are doing something", he would say, "but tell me honestly, who reads your journals and books and who listens to your lectures? And even if somebody reads what you people write in your books and journals and listens to lectures under your auspices, of what earthly use is all that? Surely, those people can neither influence public opinion or the government, both of which are impervious to fresh ideas".

There is another category of people who are wilfully ignorant of international affairs. These appear to think that if internal politics is, in their view, mysterious and sordid, international politics is many times more so. They would not, therefore, condescend to the study of international affairs, but would prefer to remain, what they consider, simple-minded and honest citizens, leaving to others the complicated and dirty business of international affairs.

These notions are, of course, based on misunderstanding of the nature of international affairs. There is certainly nothing mysterious or sordid about international politics, as of internal politics; it is just what

nations make of it. There is also nothing inevitable about international politics, as of everything else in human affairs. Politics being the reconciliation of the possible and the desirable, the future is in our hands, and unless the present is studied with the idea of providing us material for judging the future, the future will have many more surprises for us. Furthermore, politics, whether internal or international, is everybody's business, and not the exclusive preserve of a few politicians and diplomats.

There are two particularly important reasons why international affairs need be studied. The study of international affairs is not, and ought not to be, the privilege of a few, but the duty of all. For, as citizens who pay taxes, exercise the right to vote and are liable to conscription in case the country goes to war, we all have definite and important stakes in the decisions and actions that government takes on foreign policy issues and cannot, therefore, be either ignorant of, or indifferent to, them. It has been said that one of the important reasons for the success in pre-war days of Hitler in Germany and the military junta in Japan in concentrating power in their hands was the indifference of the public towards politics in general and foreign relations of their countries, in particular. That is too serious a mistake for us to commit, for, we know the high price the German and the Japanese people paid for it.

Equally important is another reason. The foreign minister of a democratic country is entitled to enlightened public support to, or criticism of, his policies and actions. In the absence of such a support or criticism his task will be decidedly difficult, for he would not know in advance the nature of public reaction to some specific act or policy decision he is contemplating, and that is bound to result in errors of judgment on his part and vacillation, if nothing worse. The goal of the foreign policy of every democratic country is the maintenance of international peace and security and it is the duty of every citizen to help the foreign minister of the country to achieve that goal without sacrificing essential national interests, by criticism of, or support to, his actions.

It is the aim of the Indian Council of World Affairs to promote and facilitate the objective study of international affairs in general and India's foreign relations in particular. Founded in 1943, the Council has today some 1800 members spread over 27 branches in leading cities of the country. It maintains the largest and the best library and reading room on international affairs in India; publishes two periodicals, the *India Quarterly* and a monthly, *Foreign Affairs Reports*; it has so far published some thirty mono-

graphs and several pamphlets on Indian and Asian affairs; it has held some important international conferences-- the most notable of which is the first Asian Relations Conference in 1947 ; some of the world's most famous men and women, like Soekarno, Attlee, Ralph Bunche and Mrs. Roosevelt, have addressed meetings under its auspices; and finally, it serves as a clearing-house of information on Indian and International affairs.

Political scientists are generally agreed, and the experience of older democracies than ourselves confirms, that the strength of a democracy very much depends on the number of voluntary organisations and the vigorousness with which they work, for just as good government is no substitute for self-government, so also government activity is no substitute to the activities of voluntary organisations like the Indian Council. Being a private, academic and research organisation, the Council occupies in India a unique position in the study of international affairs.

There is an even stronger reason for support to the Council. The Government of a democratic country, however broad-based, is normally a party-government and cannot, therefore, be expected to be objective and non-partisan in its attitude on foreign policy issues; it is interested, and rightly so, in perpetuating itself and, therefore, what it does and does not do, is meant to gain political support to its continuance in power. Obviously, however, there is more than one way of looking at public affairs and somebody must, as the guardian of all sections of the people, make an objective study and this is particularly essential in the field of foreign policy where the stakes are very high ; for this purpose, an institution is better suited than individuals, however able and objective they are. Presided over by the non-party liberal leader, Dr. H.N. Kunzru, the Council enjoys the support of different parties and communities in India and is non-partisan in character. Furthermore, the Council as such is precluded by its constitution from expressing an opinion on any aspect of Indian or international affairs. As a corollary to this, the Council derives its income almost entirely from private sources.

During the ten years of its existence, the Indian Council has very substantial work to its credit compared to the work of similar institutions abroad during the same period, and has received international recognition and appreciation of its work. It is one of the three or four active institutions of the kind in the world today. It is shortly to achieve one more of the ambitions of a private institution, (and an important one at that)

namely, the construction of its own headquarters building at New Delhi. The building, Sapru House, named after its distinguished first President, the late Sir Tej Bahadur Sapru, is expected to be ready for occupation by October this year. It has library accommodation for 2,50,000 books, an auditorium to seat 1,000 people, conference and committee rooms and administrative and research offices. It is expected that Sapru House will during the next few years become the most important centre for the study of international affairs in Asia.

ANYTHING BUT IRREGULAR: SKINNER-KA-RISSALAH

MAJOR F. G. HARDEN

I HAVE just been admiring two colour sketches made by a Persian artist of merit in the year 1828. One depicts Colonel James Skinner, the offspring of a British captain and a Rajputani lady and founder of the famous corps, presiding over a regimental Durbar. The other shows his regiment returning from a review at Hansi. As the pictures are fifty inches long and thirty high, it is possible to make a study of the smaller details.

The immediate business of the Durbar is obviously the approval of a recruit. We see the Colonel with his son, the adjutant, on the steps of his verandah : close by, in order of seniority, the risaldars are seated on a fine carpet. Before them a *jowan*, dressed and armed, sits his charger. The Indian adjutant is measuring the horse; a clerk is entering in a book the details, and probably the value, of the new silladar's equipment. The Trumpet-major is in attendance with two orderlies. A mounted duffadar (perhaps the young man's father or brother ?) watches the ceremony.

A bhisti, chaprassies and other interested onlookers stand round, including some golandaz, conspicuous for their red pagris and kamarbands worn over blue *angreekas*. They probably also belong to the regiment to work three-pounder 'galloper' guns or the smaller swivel zambooraks, which, as the name implies, were fired from a knee-haltered camel.

This is obviously an important occasion. The dignified mien and attentiveness of all show this clearly.

The other picture is gay and moving. We see James Skinner and another European officer riding at the head of the corps. Five strong rissalahs in faultless formation follow. There is nothing irregular about this regiment of Bengal Irregular Cavalry. The dressing of the long lines is perfect, so is the turn-out. Troop-leaders carry lances with triangular pennons at rest. Front rank sowars carry plain lances, sloped on the right shoulder : rear rank carry long match-locks, also sloped.



SKINNER'S HORSE
1828

P. J. Harden

Behind each rissalah two standards are borne and on the right flank of the regiment ride four trumpeters and four kettle-drummers. One hears—almost—the brazen cadence and throb-throb of the wild music: 'Bonnie Dundee' is it, or perhaps some age-old Turkoman air?

I, who enjoyed the privilege of seeing Skinner's Yellow Boys gallop past for the last time in full-dress, at Peshawar on the First of January 1915, regret greatly that I should have missed the splendid sight they must have provided at Hansi, that cold-weather day in 1828!

Of special interest is the very unique uniform of the regiment at this period. The sowars wear iron Persian-type helmets with adjustable nose-guard, long yellow alkhalaks and green trousers strapped under black boots. Over the alkhalak is worn a waist-length, half-sleeve, black-embroidered orange jacket—very smart. One suspects that these were quilted with cotton.

Risaldars wear the same dress but have a feather spray on top of the helmet and gold embroidery decorates both alkhalak and jacket.

The C.O. and adjutant in the Durbar picture also wear this uniform, with a circular white aigrette on the helmet and still more gold lace. For the Review, on the other hand, they are attired in the manner of British Light Dragoons.

Trumpeters and drummers, it is interesting to note, follow a custom in the Regular Light Cavalry and wear red alkhalaks while their jackets are yellow.

On every man's back rests a round black shield with brass bosses, and each tulwar is encased in a green scabbard.

All officers have richly embroidered shabrocks on their chargers: the men's saddle-cloths being chequered yellow and red, with the order reversed for musicians.

The more one studies these surprising pictures the more one is impressed with the uniformity and regularity of Skinner's famous regiment of Irregular Horse.

FOSSILS AT FORTY-FIVE

MAJOR J.A.F. DALAL

IT is said that during the times of the Incas, thousands of years ago, their life was patterned on a fixed age scheme. For example, from 8 to 16 years the Inca was a boy playing, from 16 to 20 he was a coca picker, from 20 to 25 he was a worker, from 25 to 50 the head of a family and a tax payer, from 50 to 60 he grew old, and after 60 he was an "old man sleeping".

PRESENT ARMY RATES OF COMPULSORY RETIREMENT

The present rules for retirement of army officers though not quite the same, appear to be based on similar lines, the retiring ages of officers of various ranks being :-

Up to and including Major	.. 45 years
Lt. Colonel	.. 48 years
Colonel	.. 50 years
Brigadier	.. 52 years
Major-General	.. 54 years
Lt. General	.. 56 years
General	.. 58 years

The age limit of retirement for specialised corps may be higher while sometimes extension may be granted up to the age of 47 years, for Majors and below who are retained in the interests of the service, or in cases where an officer was commissioned at a comparatively high age and would become eligible for a pension by getting an extension. According to the present rank structure the bulk of the army officers would be pensioned at the age of 45. This does not seem fair, and it is time the question were seriously examined.

POSITION IN FIVE YEARS' TIME

From a study of the present approximate strength of all categories of officers, (Regular, Short Service, Emergency, and Temporary Commissioned), it is anticipated that in five years' time the bulk of all

S.S.R.Cs., E.C.Os, and T.Cs. will vanish, the necessary numbers being retained to maintain the desired total strength, as it is not wise to fill all vacancies by regular officers, because the problem of retirement 'blocks' will continue.

POSITION IN TEN YEARS' TIME

Undoubtedly the AG and MS Branches have considered these 'blocks' and have worked out the retirement and intake figures for each year, but the greatest danger will be in ten years' time when the bulk of the war-time recruited (but now regular commissioned) officers will retire. It can also be safely assumed that all S.S.R.Cs., E.C.Os and T.Cs will by that time be out of the army, except a few youngsters who may get absorbed permanently. The chances for this, however, are limited.

REMEDIAL ACTION

There are two main courses open if the necessary hard core of officers is to be maintained in the peace-time army.

- (a) Increase the annual intake.

This will lead to the same result of promotion 'blocks' mentioned earlier and is not a satisfactory solution.

- (b) Increase the age limit.

This appears to be the most practical answer.

At 45 the average army officer is neither a mental nor a physical fossil. In fact we are ignoring vital statistics of the present day. A man's physical strength and mobility climb to a maximum at 20, then slowly decline. The curve for mental potency rises sharply up to 40, more slowly to 60 and shows a steady decline to 80. The average mental standard at 80 is still equal to that at 35. Thus we are sending officers out at an age when they have not even reached the peak of their mental ability. It may well be that officers of and over the age of 45 in junior ranks, are not suitable for active formations, but certainly there can be no reason for them not to continue on the staff, in specialist jobs, or in static formations. Gone are the days of the polo playing subaltern; in fact with the complications in fire, movement, and employment to the best advantage of new weapons, seasoned brains capable of grasping the situation and keeping abreast of the times are necessary. Soldiering has become a serious profession.

A man is as old as he feels. A mentally young man of 45 pensioned off is a real national waste. It is throwing away experience. For every retired man one more youngster is to be trained and paid. An officer steeped in military tradition with love for his profession, thrown out at the age of 45—can anything be more unfair? It is unjust, wasteful and wrong. In fact there should be no particular age for retirement, it should vary with the individual.

Moreover, if there is no age limit for retirement, it may attract an even better type of youth to the army, since there will not be an attitude of frustration when he compares himself to his civilian contemporaries, who will carry on in service much longer than he will, should he not rise beyond the rank of Major.

METHOD OF SELECTION AND QUALITIES REQUIRED

If it is agreed that officers should not retire at 45, the next questions to be asked are how should officers be selected for retention beyond that age, and what qualities are necessary in officers so retained.

The first question is simply answered; there should be an impartial selection board as for Lt. Colonels and higher ranks. Once the board had decided who should be retained, the officer concerned should be categorically asked whether he is prepared to serve beyond the age of 45, in the rank of major, with no prospect of promotion guaranteed. If he accepts the liability, nothing short of his death or complete break down in health, should relieve him of it. This question, and the necessary guarantee, should be taken two to three years before they reach the age of 45, from suitable officers who are not outstanding and who would retire due to a promotion block. Thereafter in their annual confidential reports it should be specially mentioned whether the officer is still recommended for retention beyond the age of 45.

The second question as to what qualities are required, is debatable, and great care will be necessary by officers judging these qualities and reporting on individuals for retention. First of all the individual must be keen and have a liking for the profession; he should be mentally alert, and physically fit. The medical category may be lowered for individuals to be employed on the staff or in specialist jobs. Above all the individual should have character, and not be unduly ambitious, or a 'fate seeker'. He should not be self-opinionated, nor should reporting officers confuse 'justified self-confidence', which is an asset, with 'self-opinionatedness'

which is a serious defect. These are some of the qualities required in all officers and more so for those who are going to remain in the army for a long time. The list is not exhaustive, and this question will have to be studied thoroughly when it is decided to retain regular military officers beyond the age of 45.

CONCLUSION

The decision that regular officers who have reached the age of 45 will be allowed to continue for such time as the State thinks fit, commensurate with the qualities of the officer concerned, should be made soon. This will regulate future intake with better chances of promotion, and the possibility of longer service for all concerned. There is among the officers, who find themselves in a promotion block, a sense of frustration which is neither good for the army nor the individual. If we do not change our die-hard old fashioned or 'Inca' ideas, we will not be moving with the times, but merely perpetuating an inherited system, which is vicious and frustrating, and which repeatedly brings us back to the question, are we "fossils at forty-five?"

STRINGER LAWRENCE

BRIGADIER H. BULLOCK, C.I.E., O.B.E., F.R. HIST. S.

IX. WAR AGAIN (1756-1757)

A LIST dated 1st January, 1756, of "Officers doing duty upon the Coast of Choromandel in the Service of the Honble the United East India Company" contains the names of one major (James Kilpatrick), 20 captains, one captain-lieutenant, 29 lieutenants, 5 second-lieutenants, and 31 ensigns and fire-workers.¹ This may be compared with the officer-strength at Fort St. David in 1748 when Lawrence first joined—one major (himself), no captains, 4 lieutenants, and 21 ensigns, five of whom he had brought out with him from England. At the New Year of 1756 Clive was absent. After two years' recuperation on furlough at Home he had gone out direct to Bombay and, arriving in November 1755, took command as a lieutenant-colonel of the combined operations on the west coast against the pirate prince Angria. These were brought to a successful conclusion in February 1756, and by the end of May he was back in his permanent civil post as Deputy Governor of Fort St. David.² As despatches from London warned them and as their own judgment indicated, the Madras Council believed that the peace was wearing perilously thin, so in July they brought the 39th Foot from Fort St. David into Fort St. George in order to concentrate their military resources and strengthen the defences of the seat of government, for the remodelling of the static fortifications of Madras was still far from complete, and alarming rumours were current that 3,000 French regulars were on their way out *via* Mauritius.³ The British and French armies on the Coast now each aggregated about 2,000 Europeans and 10,000 sepoys, though the British possessed one great advantage over the French—a naval squadron on the spot.⁴

Adlercron, at Cuddalore, continued to assert—and exceed—his authority with tiresome regularity. On 3rd January he issued an order that "as Fort St. David and Cuddalore are two distinct garrisons, the Officers commanding at either of these Places have no authority one over the other, and are to receive no Orders but from the Commander in Chief" and then laying down that the Deputy Governor might fix the daily

password for the Fort only, while all other guards on the boundaries of the settlement were to get their password each evening from Adlercron's office. The Deputy Governor, Strake, expostulated to Madras, complaining that business callers at the Company's Factory would be much impeded and trade prejudiced. The Council felt that Adlercron would change his orders as he had probably not realised their inconvenience to the Company, but meanwhile told Strake to give any orders he thought fit for the Company's service, and if any officer disobeyed them he should request Adlercron to bring the offender before a general courtmartial and see what happened.⁵ It would be tedious to take notice of many instances of such conduct, but one amusing example of Adlercronian pomposity may be mentioned. On all Fools Day he issued a Garrison Order at Fort St. David setting forth that there had been "a neglect shown to his Majesty's Field Officers and a proper Distinction not having been made between those of his Majesty's and those of the Company's, the same Compliments having been paid to Lieutenant-Colonel Lawrence and to Colonel Adlercron, it is the Commander in Chief's Order that the following Regulations for Salutes be henceforward duly observed. The Commander-in-Chief of the Land Forces to be saluted with the same number of Guns as the Admiral or Commander in Chief of the Fleet. Lieutenant-Colonel Bagshaw and Lieutenant-Colonel Lawrence to be saluted with an equal number of guns. Major Lovett, Major Kilpatrick, or the Major upon the Coast for the time being, with an equal number." Strake sent a copy of this effusion also to Madras and asked whether the Council "would please to have the same complied with." He was told that they had "no objection to the Contents of the Orders published by Colonel Adlercron although they do not perceive from whence he derives his Authority to regulate Salutes in the Garrisons of the East India Company." As Adlercron in the depth of his injured pride had forgotten to specify the number of guns to which the various officers were entitled, Lawrence and his colleagues in Council can hardly have felt able to take the business seriously.⁶

Action, when the call for it came, was not against the French. On 13th July news reached Madras of the capture of the Company's factory at Cossimbazar by the new Nawab of Bengal, Suraj-ud-daula, on 20th June. It had been anticipated that disturbances might follow the old Nawab's death and precautions had been taken, so that only five days later Major Kilpatrick was able to sail for Calcutta with 230 European soldiers and 4 field guns.⁷ Worse was to come, for on 15th August the bare intelligence of the loss of Calcutta became known at Fort St. George, although it was not until 28th September that official detailed reports of the disaster

reached Madras.⁸ Lawrence was present at the Council meeting on 20th August, when the two admirals, Watson and Pocock, were called into consultation. It was resolved to send a relief expedition comprising the whole naval squadron and as many troops as could be spared. There followed much debate as to who should command the troops. Governor Pigot offered his services as plenipotentiary of the Company and commander of the army, but he lacked military experience and the Council could not grant such full authority to any individual. Lawrence offered to go, but "the climate of Bengal was so adverse to an asthmatic disorder with which [he] was afflicted that it was thought that he would be disabled from that incessant activity requisite to the success of the expedition."⁹ The Council reported that "when we considered the Unhealthiness of the Bengal Climate at that Season, His Time of Life and State of Health, We thought the Chance of his surviving it greatly against him, and therefore desired he would waive his Motion." Adlercron then claimed the command as of right and offered to take the whole of his regiment, "but he wanted experience in the irregular warfare of India and his powers were independent of the Company's agents." So in order to pave the way for Clive, the obvious choice, it was decided to send Company's troops only to the Hooghly. Nevertheless Adlercron felt himself slighted, and to vindicate his authority even at the risk of the lives of other soldiers he declined to allow four field-guns and the local detachment of Royal Artillery to accompany the relief force.¹⁰

There was much discussion in the Council and Orme, who took part in the debates, implies that considerable unnecessary delay was thus caused. When the contingent sailed, on 16th October, differences had been sufficiently adjusted to permit the inclusion of three companies (250 men) of the 39th Foot, though on the distinct understanding that they were to serve only as marines, i.e. under the Admiral and not under Clive. Nevertheless Admiral Watson gave an assurance that he would allow them to be landed at Calcutta if necessary. One of these companies was commanded by a captain newly arrived from England, Eyre Coote, whose campaigns in South India were later to rival those of Clive and Lawrence. With them went the grenadiers and four other companies (530 men) of Madras Europeans with 100 white gunners and 1,500 sepoys and gun-lascars, the pick of the Coast Army.¹¹

With their embarkation at Madras these troops pass beyond the sight of the biographer of Lawrence, to the field of Plassey and the rise of British dominion in India. But be it remembered that from Lawrence's talent had

sprung these infantry and artillery companies of Madras whence developed not only the brigades and divisions of that Presidency but also the much larger Bengal Army. As their exploits grew and their fame spread, their veteran progenitor must have looked with loving pride on the powers of the sturdy brood whom he had brought up and taught the art of war. A special word of farewell is due to his gallant company of grenadiers, from whence descended the grenadiers of the Bengal European Regiment, to create a tradition of courageous service which did not pass away until the disbandment of the Royal Munster Fusiliers in 1922. They were long affectionately remembered by old officers.¹²

It was now, on 16th November to be precise, that news of the outbreak of hostilities with the French reached Madras. What was to be known as the Seven Years War was, in India, to be fought almost entirely in the Carnatic. Nevertheless no local reactions immediately followed this intelligence. The British naval squadron was occupied in the Hooghly, and it did not suit either Madras or Pondicherry to attempt a local offensive with their existing resources on land. The British waited on the return of Clive and Watson, the French delayed action until the arrival of reinforcements from Europe. There was little that Lawrence could do at Madras, above his routine duties in Council and as senior officer of the Company's troops, except to press on with the reconstruction of the fortifications of Forts St. George and St. David.

The first reaction of the Madras Council towards the renewal of the French war was to dispatch Lawrence hastily to Fort St. David to inspect and report upon its defences. Its former chief, Clive, had gone to Bengal, and there were rumours of imminent French attacks on the Company's outposts, making it a matter of urgency to obtain the best advice on the defensibility of Fort St. David and on any measures necessary to make it stronger. Lawrence arrived there on 25th November, and closely collaborated with Alexander Wynch, who had taken Clive's place as Deputy Governor, and John Call, who had been engineer there for some years, a young man of much promise which he was later to fulfil, for he became Chief Engineer at Madras, a baronet, member of Parliament and a Fellow of the Royal Society. The Military Consultations to the end of the year contain much evidence of the activity of Lawrence and his associates. Call was making good progress with the fortifications; provisions and military stores of all kinds were being stockpiled; and the triumvirate did not even hesitate to demolish a nearby Dutch factory to improve the field of fire from the Fort.¹³

In May 1757 Adlercron had a chance to show what he could do as a field commander. News that the French had marched to Trichinopoly came on the 15th May, and after a vain attempt by the Council to induce him to exchange places with Stringer Lawrence and let the latter lead the army out while Adlercron took Lawrence's place in Council, he marched out on 26th May with the 300 of his regiment who had not gone to Bengal, the four field-guns and 30 Royal Artillerymen he had grudged Clive, and 500 of the Company's sepoys. "By various delays arising from attention to the modes of warfare in Europe" (says Orme) it took the column until the 31st to cover the thirty miles to Chingleput, where they were joined by a Swiss company 100 strong and 300 sepoys from the local garrison. Three days later it was learnt that Trichinopoly had been relieved, and their objective was consequently altered to an attack on Wandewash. Advancing cautiously, Adlercron's force arrived before that place on 5th June at night and early the next morning attacked the town, occupying it with no fatal casualties after meeting slight resistance.

The citadel of Wandewash still remained in the hands of the French and as there was no prospect of making any impression on it before the enemy was reinforced Adlercron set fire to the town and withdrew to Outramalore, some ten miles to the westward. Arriving there on 11th June, he shortly got orders from the Council to come back to Madras immediately. (This is Orme's version of events: Adlercron himself stated that the decision to retire was his own, made after a council of war, though forced on him by the refusal of the Governor to send him ammunition and entrenching tools necessary for a siege, and also by Pigot's diversion of two cannon which had been expected). As soon as Adlercron started, the French, deriving encouragement from this retreat, began to harass Conjeveram and other advanced areas. The Council took alarm and, realising the unwisdom of their original orders, instructed Adlercron to retrace his steps and cross the Paliar River again.

Now Lawrence stepped into the breach. He had resolved never to act under Adlercron's command, but in this anxious hour he came forward and offered his services as a volunteer. Marching from St. Thomas's Mount near Madras on 19th June, he joined Adlercron's force, which was also strengthened by the incorporation of some detachments and the Nawab's cavalry from Arcot. They reoccupied Outramalore on 29th June, and that evening Adlercron sent a dispatch to Madras which though waspish towards the Governor and Council paid due tribute to Lawrence's capacity in the

field and to the confidence which his presence inspired. It concluded, "What still increases my confidence of success is that I am assisted by Colonel Lawrence who is not only deservedly esteemed for his military capacity, but has a thorough knowledge of the situation of the country."¹⁴

Let Orme describe this, Lawrence's last campaign of movement. The advance from Outramalore was delayed by an "uncommon sickness," doubtless cholera, which broke out in camp. "As many died as recovered," but in a week the epidemic ceased as suddenly as it had begun. On 11th July the British force encamped within sight of the enemy. The French had 800 Europeans of whom 100 were hussars, and 1,500 sepoy: the British 700 Europeans and 2,000 sepoy but no cavalry except a few troopers used as scouts. The next day Adlercron and Lawrence, now reinforced by 500 of the Nawab's horsemen, were ready to offer battle and drew up as for a general action, but except for mounted patrols the French stuck to their trenches. "This trial convinced Colonel Lawrence that nothing but the certainty of advantage could bring them to action, and enough being done to convince the country that the former retreat had not been in consequence of fear, he thought it best to put an end to the expense of the campaign." So on 26th July he marched away and reached Conjeveram unmolested in two days. Leaving there 500 Europeans and 1,500 sepoy, the rest of the army dispersed to its normal cantonments. "Thus ended the campaign, in which the whole force that Madras and Pondicherry could bring into the field remained forty days within a few hours' march of each other, and separated, without a man being wounded on either side. Nevertheless, both were right, according to their different views and circumstances, in refraining from action."¹⁵

Such was the embarrassment caused to the Council by Adlercron's presence on the Coast that they are said, despite their shortage of European troops in the face of French threats and the absence of the Bengal contingent, to have persuaded the Directors in London to bring pressure on the government to recall the 39th from India, merely to get rid of their commanding officer.¹⁶ At least, so Biddulph asserts, and though the evidence for his statement has not been traced it is credible. In June 1757 orders arrived from Europe for the regiment's recall, with permission for its officers and men to volunteer for the Company's service. Nearly all the survivors of those who had gone as marines with Clive joined the Bengal Europeans, whilst many of the men at headquarters with Adlercron transferred to the Madras Europeans. Definite movement orders were received in August,

but no shipping was then available ; and headquarters do not seem to have left Madras until November. Altogether 350 rank and file of the 39th Foot are said to have entered the Company's service, receiving a bounty of ten pagodas each. Five officers also transferred, with a step in rank.

It was on 11th November, 1757, that Stringer Lawrence resumed office as Commander in Chief, in place of John Adlercron.¹⁷ He was fifty nine. And so we come to the end of "this busy anxious year...during which almost every day brought the solicitude of some suspended event or the expectation of some important mischance, but unremitting caution and vigilance, directed by knowledge and sagacity, supplied the defect of force", as Orme summed it up.¹⁸

NOTES AND REFERENCES

- (1) *Vestiges of Old Madras*, Love, ii. 511.
- (2) *Ibid.*, ii. 478.
- (3) *Life of Eyre Coote*, Wyll, 24-25 ; *Vestiges of Old Madras*, ii. 472.
- (4) Orme (1803 edition), ii. 85.
- (5) Fort St. George Military Consultations, 12 Jan. 1756.
- (6) *Ibid.*, 9 April 1756.
- (7) Wyll (p. 25) says the soldiers were *chiefly* Europeans but in Fort St. George Military Consultations, 24 Aug., they are described as "230 Europeans". Capt. John Williams, in *Rise and Progress of the Bengal Native Infantry*, 1816 (pp. 134-5, note), implies that the grenadier company went with Kilpatrick, but this is wrong: the grenadiers were still at Madras after Kilpatrick left on 30th July (Fort St. George Military Consultations, 30 July), and appear in Clive's embarkation return of 5 Oct. See also Orme (1803 edition), ii. 84. For the 4 field guns see Kilpatrick's report from "on board the Delaware" at Fulta, 5 Aug. (Fort St. George Military Consultations, 28 Sept.).
- (8) *Vestiges of Old Madras*, ii. 478-9. Orme states that on 5 Aug. letters were received from the fugitives at Fulta "with details of the capture of Calcutta, which scarcely created more horror and resentment than consternation and perplexity." Orme ought to know, for he was on the spot and a member of the Council ; but the letters he mentions must have been private communications. Fort St. George Military Consultations, 6 Aug., refer to "the fresh intelligence received from Calcutta of the dangerous situation of that Settlement," which hardly sounds like news of its actual loss ; and not until 21 Aug. does there

- appear in the Military Consultations an entry that "intelligence was received on the 16th instant of the taking of Calcutta by the Moors on 20th June".
- (9) Orme (1803 edition), ii. 88.
 - (10) Wylly, *Life of Coote*, 26.
 - (11) Clive's detailed "Return of the Troops Order'd for Bengal" (Fort St. George Military Consultations, 5 Oct.) shows 103 officers and men of the Company's artillery, 112 grenadiers, and 358 European infantry, with 20 camp-followers: total, 593. The Military Consultations, 13 Oct., give the numbers embarked by that date as "528 Military and 109 Train," officers included, with 940 sepoy, 160 lascars, 12 field-guns, and a howitzer. 100 more sepoy followed at the end of the month in the *Lapwing* (Mily. Consultations, 28 Oct.). Later the Council wrote that they had sent "above 800" Europeans (Fort St. George Military Consultations, 30 Oct.). Orme says 1,500 sepoy went, Wylly makes the total 1,200. See also Orme (1803 edition), ii. 89.
 - (12) Williams, *op. cit.*, pp. 134-5, note.
 - (13) Fort St. George Military Consultations, 20 Nov., and *passim* until 31 Dec.
 - (14) India Office MSS., Home Miscellaneous Series, vol. 95, p. 15; Orme, 1803 edition, ii. 217-220.
 - (15) Orme, *op. cit.*, ii. 220-1.
 - (16) Biddulph, *Stringer Lawrence*, 100.
 - (17) Love, *op. cit.*, ii. 512; Orme, *op. cit.*, ii. 231; Wylly, *op. cit.*, 55. Orme and Love are strangely silent as to Adlercron's actual departure and Lawrence's resumption of the chief command.
 - (18) Orme, *op. cit.*, ii. 253. He was writing specifically of the Carnatic but his review can justly be applied to the whole of the South.
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WHY NOT TRY WRITING ?

MAJOR C. L. PROUDFOOT

ONE of the greatest difficulties facing the Editors of Service Magazines today is the utter dearth of original material from Indian officers. One reason for this is that few of our officers have the necessary battle experience to substantiate doctrinal theories with practical knowledge ; another is our dependence on foreign sources for most of our combat equipment. These two factors rule out authoritative articles on development and usage, which at the most, can only cover old ground. Hence the bulk of our doctrinaire service journals are composed of articles re-published from British and American journals whose writers have the advantage of current combat experience.

With this consoling reflection as an excuse most of our officers have absolved themselves of the need for original thought and theory and are content to accept their professional knowledge second hand. The only time they bestir themselves to frantic energy is the occasion of the rare Training Essay, after which they relapse into the daily mental rut of administration and training. Which is a pity, because original thought and discussion is one of the greatest stimulants for professional advancement. And original thought stems easily from research; research into military history, the writings of proven leaders and military scholars, and even ordinary novels with a military background.

WRITING FOR PLEASURE

And what about writing itself ? What a sad percentage of our officers are interested in writing as such. The same small coterie of writers seems to recur with appalling regularity in the Service Journals and of these hardly two or three have achieved any degree of success outside Service circles. And yet few are in a happier position to write for pleasure than the Army Officer. Assuming that he is not on a Course or preparing for the Staff College the average officer has fairly regular hours with a reasonable amount of free time to himself which he spends studying, reading, paying social calls, playing Bridge or just doing sweet Fanny Adams ! Remotely few are interested in writing than which there

is no better exercise for creative ideas, orderly thinking and logical processes. The reasons for this apparent indifference to writing are, firstly, that writing is too much like hard work, and "damn it all, why spend leisure hours which are meant for relaxation from work in doing more work !" Secondly, there appears to be no future in writing. "Who to write for ? Who will publish what I write ? What to write about ?"

To answer the bit about relaxation. Writing is a relaxation, a good relaxation inasmuch as it is a fresh mental process and offers the unbounded satisfaction of creative work. But work it definitely is ! As to there being a future in writing—there is not only a future but also a present, as I have pointed out. Service Journals will be glad to use good articles by officers and, depending on the individual's ability, any reputable Sunday newspaper will gladly consider an interesting or unusual article for publication. But there are certain restrictions about writing for the general Press and these are mentioned later.

HOW AND WHAT TO WRITE

As far as the art of writing is concerned, our own Military writing with which every officer is supposed to be familiar is in fact the basis for all good writing, inasmuch as it begins with a relevant introduction defining the purpose of the article, then goes on to enumerate and discuss the factors for and against a case, and concludes with a logical deduction. So there is little new in the "art" of writing that an officer has to learn. All he has to do is to make his style more informal, avoid Military vocabulary and "Staff Duties" punctuation and abbreviation, and build around the basic structure of the Military essay. He would then have turned out a fairly good article. Assuming of course, that his subject matter is original and interesting and his reasoning plausible. Illustrated by relevant photographs or sketches the value of the article is doubled. So there you have the structure for an article on a Better Entrenching Tool, The Value of Snowshoes in Winter Warfare, The Technique of Carrier-Borne Infantry or any other idea you wish to propound.

Travel articles are even easier, being simple chronological reports of one's journey with asides for descriptions of modes of travel, scenery, townships and most of all—the people and customs. Support well with good appropriately captioned photos and a sketch map if necessary. Historical facts, if quoted, must always be accurate. If accuracy cannot be guaranteed, omit these, and concentrate on the details of the journey

and description. This is the easiest form of writing and should come readily to Army officers who have such wide scope for travel in the Army, and often visit places not easily accessible to others.

The short story is perhaps the hardest form of writing and an art which can only be acquired by long practice. And yet I have met officers who have had a first try and produced a very good short story that needed little editing before publication. This form can best be cultivated by reading short stories by well-known artists in this line—Damon Runyon, de Maupassant, Rudyard Kipling and not forgetting the greatest of them all, Somerset Maugham. For the enthusiastic embryo short story writer the best model is undoubtedly the "Argosy". But whatever you do be original. The unforgivable crime in writing (and unfortunately the commonest) is plagiarism.

Whilst it is true that certain people have a talent for writing easily it is also true that there are many more who can write very well, who with practice and the will to do so can develop into good writers. The formula for this is "You never know how good you are till you try". For the officer who discovers that he can write easily and well and wishes to go in for serious writing, a second-hand Portable is a useful investment. Typing can be learnt very easily in a month and paper is very cheap. Thereafter the budding writer is all set for a literary career in a small way. And he would be well advised to try writing for his own Unit or Corps Journal first, and then work his way round to other Service Journals. Those which pay for articles are the U. S. I. Journal, the Service Corps Journal and the "Fauji Akhbar" (now "Sainik Samachar").

WRITING FOR THE PRESS

To the writer who wants to try his hand at commercial work for the Press a special word of advice is necessary, and one of warning. When writing for Service Journals an officer may write on any subject he chooses, as it is the responsibility of the Editors of these Journals to clear all doubtful articles for security with GS Branch Army Headquarters. But in the case of the general Press, Army Officers are naturally restricted to the subjects of discussion and these are clearly specified in RAI 333 and Army Order 223/51. Briefly, if one steers clear of politics, Military security and subjects "likely to embarrass the Government" the requirement would be met. But unless the author is quite confident that his subject is totally innocuous—such as Mountain Climbing, Bee Keeping,

Botany, Music, Poetry and Hunting, Shooting & Fishing for instance—it is a wise procedure to send all articles to G S Branch for vetting, as sometimes the most unexpected things (unknown to the layman) turn out to be “embarrassing to the Government”.

The correct way to send an article for security vetting is to get it typed in duplicate, double spaced, with a No Objection to Publication certificate from your CO, and send it up officially from your Unit through Proper Channels to G S Branch at Army Headquarters. The process is long, sometimes as long as two months, depending on the type of material to be investigated. So if the article is intended to be a topical one, the writer must anticipate his publication date and send the article for vetting well in advance.

The writer breaking into new pastures should not be beaten down by the little slips which begin “The Editor regrets.....”. These are the tokens by which he will learn to analyse his market and find out what type of material particular Editors want or don’t want. If he is a good writer and persistent enough he will eventually establish himself in a small way. For him there will be no greater thrill than seeing his first article in print. If he is faint-hearted he will eventually let little slips convince him that he was not born to flourish as a writer, and retire to the Mess bar in despair. Or revert to Bridge.

In conclusion, it would be apt to quote the famous author, who on being asked by an admirer, “What should I do to become a writer ?” replied briefly but very much to the point, “Start writing”.

THE ASCENT OF EVEREST

BRIGADIER SIR JOHN HUNT, C.B.E., D.S.O.

With illustrations, Hodder & Stoughton, 25/-

In September 1952, Brigadier Sir John Hunt, at that time Colonel Hunt, was engaged on preparations for Allied manoeuvres in Germany, when he received a telegraphic offer of the leadership of the British Expedition to Mount Everest, that was to be mounted in the spring of the following year. The offer was from the Himalayan Committee, which is a joint formation of the Alpine Club and the Royal Geographical Society. Sir John accepted, and with that acceptance the Everest Expedition of 1953, which culminated finally in the conquest of Everest, took shape.

In the light of what the Expedition accomplished, it is not difficult to conclude that the Himalayan Committee was wise in the choice it made of the Expedition's leader. In typically British fashion, after having named the leader, the Himalayan Committee while readily placing all its resources at his disposal, withdrew and left the field open to him. As is usual in such ventures, there were many earnest claimants for inclusion in the expedition. There were also many suggestions, some even of a Heath Robinson ingenuity, for the speedy and successful ascent of Everest. It was Sir John's task, to select and train his team of climbers and high altitude porters, to plan and organise the expedition down to the smallest detail, and to lead and finally launch it at its objective. The task was well done.

The problem of Everest, the weapons by which it had so long succeeded in holding out against resolute men, had three aspects, namely, vertical scale, climatic conditions and climbing difficulties. Each was very carefully studied and methods devised to overcome them.

The climbers, finally selected by Sir John, were ten in number with some reserves, all from Britain and the Commonwealth countries. Among the high altitude Sherpas selected, were many "Tigers", veterans of former attempts on Everest. It is interesting to note that Tenzing's

original role in the Expedition was that of Sirdar of the porters. It was only later in the Expedition, on 8th May 1953, when partly up the mountain, that Sir John unfolded his final plan and, basing his selection on personal observation and the assessment of each man's ability as a high altitude climber, named Evans and Bourdillon, and Tenzing and Hillary, as the climbers for the two assaults on the summit. The first pair, after a heroic struggle, were compelled to give up after reaching the South summit of Everest at over 28,700 ft. on 26th May 1953. Till then it was the highest point ever reached on Everest. The second assault pair, Tenzing and Hillary, battled through successfully to the summit of Everest at 11.30 hrs. on 29th May 1953. It is clear from chapter sixteen, "The Summit", which is written by Sir Edmund Hillary, that their ability to reach the top and to return alive was made possible only by life-giving bottles of oxygen left near the South summit, by Evans and Bourdillon, in their earlier attempt.

Throughout the pages of "The Ascent of Everest", the emphasis is on teamwork. While Sir John's leadership is never in doubt, it is never obtrusive. Similarly, no member of the Expedition, Hillary and Tenzing not excepted, is put forward as better than his fellows. The conquest of Everest was not the work of two men, but of a team, a team in which the Sherpas played a considerable part. "This is the story", begins Sir John, "of how, on 29th May, 1953, two men, both endowed with outstanding stamina and skill, inspired by an unflinching resolve, reached the top of Everest and came back unscathed to join their comrades.....And this will not be the story of those two men alone. In this or any other mountain venture, sound and successful climbing is fundamentally a matter of teamwork.....The ascent of Everest, perhaps more than most human ventures, demanded a very high degree of selfless co-operation. It would be difficult to find a more close-knit team than ours. In this, and in the work of our Sherpas, lies the immediate secret of our success".

The book itself is the product of a staff college mind, and is set out in much the same manner as the recording of a successful campaign. It is divided into six parts, namely, back-ground, planning, approach, build-up, assault, and aftermath, which gives an indication of the methodical manner in which the whole Expedition was planned and put into operation. The style is soldierly, simple and straightforward. There is no playing up of tense moments, yet the cold courage, grim determination and indomitable spirit, that the conquest of the highest mountain in the world called

for, are there. There are also occasional flashes of humour, the best of which is Sherpa Ang Nyima's anxious question, on the return of Evans and Bourdillon, whether "Everest khatm ho gya?" The book is beautifully illustrated in colour and tone, and has nine informative appendices, a glossary, and an index.

"The Ascent of Everest" is a must for every officer.

H.L.F.

NOW THRIVE THE ARMOURERS

ROBERT O. HOLLES

With illustrations, George G. Harrap & Co., Ltd., 12/6.

On 9th November, 1950, the trooper "Empire Windrush" disembarked the 1st Battalion of the Gloucestershire Regiment at Pusan. On 20th December, 1951, the trooper "Empire Fowey" disembarked the remnants of the battalion at Southampton. In between, the battalion won imperishable renown for its fighting in Korea, as well as a U.S. Presidential Citation.

The author, a regular soldier, served as a sergeant with the Gloucesters in Korea, and tells without heroics where the battalion went, how it lived, and what it did. The story is essentially that of an other rank and, for that reason more than for any other, it is valuable. Campaigns are most often seen as they appear in the Officers Mess; what they appear in the Sergeants Mess is sometimes quite a different story.

The book is also worth reading for the impressions it gives of what the fighting in Korea was like, the climate and the terrain. Not less worth-while is the impression that is conveyed of the great numerical strength of the Chinese Communist forces, and their scant regard for losses, in attaining an objective. With the British soldier's flare for succinct expression, the Allied plan for decimating the Chinese Communist forces is referred to as "meatgrinder" tactics.

The title of the book is intriguing. It is taken from Shakespeare's *Henry V.*

"Now all the youth of England are on fire
And silken dalliance in the Wardrobe lies;
Now thrive the armourers, and honour's thought
Reigns solely in the breast of every man."

H.L.F.

FLEET ADMIRAL KING

EARNEST J. KING & WALTER MUIR WHITEHILL

Eyre & Spottiswoode, 30/-

The first edition of this book, published in the United States in November 1952, included in considerable detail events in the early life of Admiral King and his naval career before reaching Flag rank. The present edition published in England is an abridged version which begins in June 1930 when King as a Captain in the U.S. Navy assumed command of the Aircraft Carrier "Lexington." By then, Admiral King was already 52 years of age and had 32 years' service in the Navy. The earlier period of his life and the manner of professional training that he received to fit him for the high command that he held during World War II, has been condensed in this book into the prologue. It has been assumed that such details of his early life and his training would not interest the foreign reader, but it is indeed a great pity, for the reader of this edition cannot help but feel that he would have liked to have known King as a young man.

A few days after Pearl Harbour, Admiral King was designated the Commander-in-Chief, U.S. Fleet; in which capacity he was directly responsible to the President under the general direction of the Secretary for the Navy, for exercising supreme command of all U.S. Naval Forces spread through the four corners of the globe, and which on the day of victory had reached the stupendous strength of 1,849 ships, 23,380 aircraft and 3.7 million personnel.

On 12th March 1942 President Roosevelt issued an executive order by which Admiral King was also made the Chief of Naval Operations which meant that in addition to shouldering the dual responsibility for the forces of the U.S. Navy, he, as a member of the American Joint Chiefs of Staff and the Anglo-American Combined Chiefs of Staff, was closely concerned with the formulation of Allied global strategy. In his latter two capacities, King had the high privilege of participating in international discussions between President Roosevelt, Prime Minister Churchill and Marshal Stalin, that shaped the strategic course of World War II. These deliberations are recorded in some detail.

Although written by Commander Whitehill in the third person, the book reflects the personality of Admiral King throughout. The reader

sees a tough man of action, who believes in saying and doing what he thinks is right, irrespective of what politicians in high places might think of him as a result. He was considered so tough that he is humorously stated to have needed a blow torch to shave every morning !

There is reference in this book to one or two serious differences of opinion that have led to friction in the higher command of the U.S. Forces. One such instance between King and the Army Air Corps, concerns the role of Naval shore-based aviation. This friction might have seriously jeopardised anti-submarine operations off the west coast of America at a critical period of the war, had not a compromise been achieved before it was too late. Another was the result of uncalled for political interference in the choosing of Naval officers for promotion to higher rank. These will be of interest to the Indian reader if only as an indication of what can be avoided by being forewarned.

This is a book that will interest not only the war historian and a reader of biographies but also a student of strategy. Parts contain unnecessary detail but on the whole it is a most interesting and readable book.

V.A.K.

HISTORY OF MARINE CORPS AVIATION IN WORLD WAR II

ROBERT SHERROD

Combat Forces Press, \$. 6.50

The much glamourised U.S. Marine Corps is a small but important part of the U.S. Navy designed primarily to provide assault troops in amphibious operations. Few people outside the United States perhaps realise that even this relatively small Corps has its own aviation and in this respect is unique in the world. Starting the war with 13 Squadrons and 641 pilots, the Marine Corps Aviation ended the war with 128 squadrons and 10,049 pilots, not to mention some 1,060,000 non-flying personnel !

The author, as a war correspondent in the Pacific theatre had covered all the major campaigns of World War II in the Pacific, and had come to have a great regard for the Marine Corps. In this book he traces the history of Marine Corps Aviation from its inception in 1912 to the

beginning of the war in Korea, but much of it is a record of the part played by the various Marine Corps air squadrons in the Pacific operations.

The general reader will find the 64 pages of photographs helpful in breaking up the somewhat too meticulously detailed narrative of events. It appears to be written primarily from the point of view of what the participants in the various operations would like to know. The book will serve as a useful reference for some aspects of the operations in the Pacific during World War II.

V.A.K.

THE INDIAN OCEAN

ALAN VILLIERS

Museum Press, 22/-

Of the three great Oceans, the Indian was upon the whole, always the most kindly to sailing ships. It was the flying fish ocean of the old songs. Though the least of the three oceans it is in many ways the most interesting, not only for colour but adventure and picturesque background. It is the Ocean which we in India have to become familiar with in our own interest.

The islands in the Pacific like Honolulu and Tahiti, are regarded as homes of romance, and have sweet sounding names; but Honolulu is virtually a suburb of Los Angeles, and the grass skirts in Hawaii are provided exclusively for tourists. The situation in the Indian Ocean is different. Here many of the islands remain unspoiled. The roar of the aeroplane engine overhead is still almost unknown, and away from the trade routes few steam ships are to be seen. The real spirit of the South Seas is to be found in the Indian Ocean, and as for history, it offers perhaps the richest field among the three Oceans.

The author is well qualified to write on the subject, for not only has he made a deep study of the history of the Ocean, but has sailed a good deal in and about its vast spaces, both in sail and steam. He had first gone to sea in sail at the age of 15 and when he was only 31 had commanded a full-rigged ship on a voyage round the world. For a year he even sailed with the Arabs in the deep sea and coastal dhows, up and down the Persian Gulf, the Red Sea and along the east coast of Africa. During the

war, as an officer in the Royal Navy, he has seen service in landing craft in the Bay of Bengal and elsewhere in the vicinity.

The book is enthralling reading, and perhaps for the first time puts the Indian Ocean in its true perspective. There are interesting accounts of pirates and slave traders and the story of wind-jammers in the Roaring Forties, interposed with description and history, of which the Indian Ocean is so rich. Attractively got up and well illustrated, the book is strongly recommended for either a library or a private collection.

V.A.K.

THE CAMPAIGN IN NORWAY

T.K. DERRY

With illustrations and maps

H.M. Stationery Office, 35/-

This book is the first of the military series of the United Kingdom History of the Second World War. The beginning of the War provides the vital test of the defence policies of the democratic countries. At this stage there is no blank cheque for men and material available to the Commander.

The practical problems with which the Government and Commanders are faced in such a situation can be studied in this Campaign. In this Campaign also the technique of combined operations was employed for the first time.

Unfortunately the author has had to describe a number of scattered actions of small units which do not interest the reader seeking for the wider picture.

From the outset, the Expedition was doomed to failure. The forces and material employed were limited; hence the initiative was lost early in the Campaign.

The Allied air and land forces were based on England from which no sufficient air strength could be mounted to secure an airfield to support the naval and ground forces or to permit the capture of a base in Norway. Lastly there was no defined aim of what was intended to be achieved and

in many cases Commanders were in doubt as to their task until the last moment. One Commander writes that "plans were concocted from hour to hour."

This Campaign like that of Greece which followed later seems to have been based on the idea that what was politically desirable was administratively and operationally possible. When policies dictate, military planning loses realism because it is coloured by optimism and wishful thinking.

The last chapter of the book dealing with the "Campaign in Retrospect" is useful, especially to the reader who knows the sequence of events of the Campaign and does not wish to labour through the actions of small units that form the bulk of the book.

The book is well illustrated with coloured and sketch maps.

J.N.

THE WAR IN FRANCE AND FLANDERS 1939-40

L.F. ELLIS

With illustrations and maps

H.M. Stationery Office, 37/6

This is the story of the British Expeditionary Force which under Lord Gort fought in the opening stages of World War II in France and Flanders. Britain entered the War entirely unprepared. It is the business of the politician before War is declared to place the soldier in the best position to "continue his policy by other means". The opening phases of World War II were a repetition of the old story of a democracy entering a War unprepared, and paying bitterly by its soldiers' blood for its sins of omission.

Although the Expeditionary Force maintained its cohesion to the last it had to fight beside a tottering Ally. The French higher command was completely beaten by the speed of the events and lost control of the Armies who were left to fight without any leadership or direction. The stress of War is a problem with which all commanders are faced, but in addition Lord Gort had the mental conflict of having to co-operate with the French on the one hand and save his army from destruction on the other.

The glory which other generals have earned in the later stages of the War has made one forget the gallant leadership of Lord Gort, who faced with overwhelming odds saved the bulk of his forces for another fight.

German generals have blamed Hitler for allowing the British Expeditionary Force to escape from Dunkirk. The author shows that the evacuation was the result of the fighting qualities of the Allies and in no case due to a deliberate diminishing of effort on the part of the Germans.

The book contains a useful supplement which deals with the German side of the Campaign. This shows how the plan for the break through at Sedan was conceived and how the subsequent operations were carried out by the Germans. Thus the reader is presented with a view from "both sides of the hill."

The book is well illustrated with maps and sketches which make it easy to follow the sequence of the Campaign.

J.N.

BRITAIN

AN OFFICIAL HANDBOOK

Prepared by the

Central Office of Information, London

This is a factual handbook which presents in easily readable form a wide range of basic reference material dealing with British Government and administration, defence, the national economy, transport and communications, labour and management, social welfare, religion, science and the arts, broadcasting and the press. It will prove invaluable to the travelling business man or holiday-maker in the United Kingdom. For the writer and journalist it will provide a check on facts. The extensive bibliography will be useful to the reader interested in a further study of British affairs. (Copies can be had from British Information Services, Eastern House, Mansingh Road, New Delhi. Price Rs. 4/8/- plus Re. 1/2/- postage).

OUR INDIA — 1953

MINOO MASANI

Oxford University Press, Rs. 5.

First published in 1940, this completely revised edition became necessary owing to the great changes that have taken place in this sub-continent as a result of World War II and the subsequent political division in 1947.

As the author says in his preface it is therefore the story of a New India. Yet fundamentally it is still an attempt to indicate how planned prosperity can be achieved by harnessing all the vast natural and human resources of the land. The illustrations by C.H.G. Moorhouse are well executed.

**OXFORD ECONOMIC ATLAS
FOR INDIA AND CEYLON**

Prepared by the Cartographic Department of the
Clarendon Press, Oxford

Oxford University Press, Rs. 8/8/.

This new Atlas contains ninety-seven pages of maps and statistical diagrams. Of the forty-one "Area" maps, fifteen are devoted to India, Pakistan and Ceylon. These are followed by the economic section. There is a comprehensive gazetteer.

CORRESPONDENCE**THE INDIAN CUSTODIAN FORCE**

LIEUT-GENERAL SIR REGINALD SAVORY, KCIE, CB, DSO, MC
Winsford, Near Minehead, Somerset, England

The way in which the Indian Custodian Force in Korea has carried out its most difficult and delicate task has filled me with pride at this achievement of my former comrades-in-arms.

May I therefore ask you to publish this tribute to them, in the next issue of your Journal.

"SURYODAYA"

This year's first Volume of the Eastern Command Journal "Suryodaya" is now available. Copies may be ordered from The Editor, Lieut.-Colonel A.N.S. Murthi, Headquarters Eastern Command, Ranchi.

SECRETARY'S NOTES

Lectures

Between February and April this year nine lectures were held in New Delhi :—

1. "India and Her Neighbours—A Geopolitical Interpretation", by
Mr. C.S. Venkatachar, I.C.S. 2nd February 1954
2. "Manpower and Modern Arms", by
Lieut.-Colonel D.K. Palit, Vr. C. 23rd February 1954
3. "Administration—The Human Aspect",
by Mr. S.B. Bapat, I.C.S. 9th March 1954
4. "Current Affairs", by
Mr. K.M. Panikkar 16th March 1954
5. "China and the U.N.—Legal and
Constitutional Issues", by
Mr. Nagendra Singh, I.C.S. 26th March 1954
6. "The N.N.R.C.", by Lieut.-General
K.S. Thimayya, D.S.O. 29th March 1954
7. "The Work of the Custodian Force", by
Major-General S.P.P. Thorat, D.S.O. 1st April 1954
8. "An I.D.C. for India", by
Mr. H.M. Patel, I.C.S. 6th April 1954
9. "The Middle East" by
Mr. A.A.A. Fyze. 27th April 1954

Corresponding Members

In addition to the names announced in the last issue of the Journal, the following corresponding members (liaison officers) have been appointed :—

1. Lieut. Colonel S.J. Mukand National Defence Academy,
Dehra Dun.
2. Squadron Leader Jaimal Singh H.Q. Training Command,
I.A.F., Bangalore.
3. Squadron Leader A. Sita Ram No. 1 Air Force Academy
I.A.F. Station, Begumpet.

Changes of Address

Members are requested to inform the Secretary whenever there is any change in their address.

We thank our readers who came forward to our assistance in tracing the whereabouts of the members whose names were published in the last issue of the Journal. Here we give the names of a few more U.K. members and their last known addresses whose present whereabouts if known to anyone may please be communicated to this office.

1. Major D.A. Bond,
Carlton Lea,
Lathom,
Nr. Ormskirk,
LANCS, ENGLAND.
2. Captain J.C. Bowen-Colthurst,
Milnes' Landing,
V.I B.C.,
CANADA.
3. Major R.H. Farrimond, M.C.,
'A' (Welfare) Branch,
H.Q. British Army of the Rhine,
B.A.O.R. 1, GERMANY.
4. Lieut. Colonel F.J.W. Firth,
Cavalry Club,
127 Piccadilly,
LONDON, ENGLAND.
5. Lieut. Colonel J.N. Fraser, M.C.,
C/o Lloyds Bank, Ltd.,
6 Pall Mall,
LONDON, S.W.1., ENGLAND.
6. Lieut. Colonel T.H. Kelleher, R.A.,
190 Ermin St., ST RAIION,
SWINDON, WILTS, ENGLAND.
7. Lieut.Colonel R.R.B. McLean,
Many Trees,
Packhorse Road,
Bessels Green,
KENT, ENGLAND.
8. Lieut.Colonel W. Porter, R.E.,

- 7, Selborne Place,
HOVE, SUSSEX, ENGLAND.
9. Lieut. Colonel J.H.S. Watt, RAOC,
"ST. CATHERINES",
286 Harant Road,
DRAYTON, PORTSMOUTH, ENGLAND.
10. Captain D.H. West,
C/o Lloyds Bank, Ltd.,
Clive Street,
CALCUTTA.
11. Lieut.Colonel W.T. Wynne, AOC,
N.C.B. Hostel,
MALTBY, YORKS, ENGLAND.
12. Lieut.Colonel L.G. Young,
Lean Cottage,
West Woodburn,
NORTHUMBERLAND, ENGLAND.

Subscriptions

Subscriptions are payable in advance. The financial year of the Institution is from January to December. Intending members can join at any time of the year, when back issues of the Journal for that year will be supplied.

New Members

From 1st January to 31st March 1954 the following members joined the Institution :—

- AGATE, Commander H.A., I.N.
- AJIT SINGH SACHDEV, Lieut., Artillery.
- ARORA, Flight-Lieutenant M.M., I.A.F.
- BAKHTAWAR SINGH, Captain, Armoured Corps (T.A.).
- *BALAKRISHNAN, Lieut. C.K., I.N.
- BALINDER SINGH GREWAL, 2/Lieut., Artillery (T.A.).
- BALWANT SINGH, Captain, Sardul Light Infantry.
- BAPAT, Esq., S.B., I.C.S.
- BAWA, Lieut.-Colonel J. S., Engineers.
- BERY, Captain N. L., Engineers.
- BHALLA, Major J.J.S., A.M.C. (T.A.).
- *CHANDVADKAR, Major M.R., A.S.C.

*Life Members.

CHENGAPA, Captain, The Rajput Regiment.
 CHOWLA, Captain T.R., A.S.C.
 DAMLE, Captain K. P., A. S. C.
 DESHPANDE, Captain L.K., 7 Light Cavalry.
 DEVDHAR, Esq., V.S.
 DHARM PAL, Dr., M.A., Ph.D.
 DHINDSA, Lieut. J.S., I.N.
 DIAS, 2/Lieut. F.N., Artillery (T.A.).
 DORDI, Wing Commander J.B., I.A.F.
 DOUGAL, Major B.S., A.S.C.
 DUBEY, Brigadier K.N.
 DUFF, Captain S.A., A.S.C.
 ENGINEER, Lieut.-Colonel H.N., Signals.
 GORE, Captain M.V.
 GOYAL, 2/Lieut. V.M., Artillery (T.A.).
 GREWAL, Captain H.B.S., Signals.
 GURAYA, Lieut.-Colonel H.S., A.S.C.
 GURDEV SINGH SANDHU, Captain, 112 Infantry Bn (T.A.).
 GURCHARAN SINGH, Captain, Signals (T.A.).
 GURINDER SINGH AHLUWALIA, 2/Lieut., A.S.C. (T.A.).
 HARNAM SINGH, Captain, A.S.C.
 HARWANT SINGH, Lieut.-Colonel, M.C., The Sikh Regiment.
 JAYASANKARAN, Major V.B.M., The Madras Regiment.
 JAYAVEL, Squadron Leader C., I.A.F.
 KAILASAM, 2/Lieut. P.S., 119 Infantry Bn. (T.A.).
 KANTHY, Major A.P., The Assam Regiment.
 KANWAR, 2/Lieut. R.M., Engineers.
 KANWAR, Major R.R., The Dogra Regiment.
 KHANWILKAR, 2/Lieut. V.S.D., Engineers.
 KHAZAN SINGH, Captain, 112 Infantry Bn. (T.A.).
 LEE, Commander E.H., R.N.
 *MANGAT, Major A.S., Engineers.
 MATHEW, Colonel K.T.
 MATHUR, Lieut.-Colonel V.N., Artillery.
 MOHAN MUKAND SINGH, Lieut.-Colonel, The Dogra Regiment.
 MUDALIAR, 2/Lieut. P.G., A.S.C. (T.A.)
 MURTHI, Lieut.-Colonel A.N.S., A.E.C.
 OMBIR SINGH, 2/Lieut., Engineers.

*Life Members.

*PAGNIS, Captain D.M., A.S.C.
PARDESHI, 2/Lieut. C.G., A.S.C. (T.A.).
PARTAP SINGH, Captain.
PAWAR, Squadron Leader P.B., I.A.F.
PENTY, Major Z.M., 5 Gorkha Rifles (F.F.)
*PURI, Colonel Y.R., Engineers.
RAJAH, Major M.R.G.
RAJU, Captain V.P., Signals (T.A.).
RAO, Major B.N., Signals.
*RAO, Lieut. S.N., A.S.C.
REDDI, Captain S.L.N., A.O.C.
SADHU, Major D.N., E.M.E.
SALDANHA, Captain L., A.O.C.
SANDHU, Major J.S., The Sikh Regiment.
SARIN, Esq., H.C., I.C.S.
SAVANT, Major P.W., Artillery.
SETH, 2/Lieut. K. R., Artillery (T.A.).
SHARMA, Lieut. R.N., The Punjab Regiment.
*SHIV SINGH, Lieut.-Colonel, Signals.
SIVARAMAKRISHNAN, Major K.S., E.M.E.
SOBHA CHAND, Lieut.-Colonel, The Grenadiers.
SUCHA SINGH, Major, Vr. C., M.C., The Maratta Light Infantry.
TYAGI, Lieut. B.S., Artillery.
VED PARKASH NAYAR, Captain, Artillery.
VIJAYAN, 2/Lieut. V., Artillery (T.A.).
VISHWA MITTER, Major, E.M.E.
WALKAR, Major, L.A., Signals.
YADAV, Lieut.-Colonel H.S., The Grenadiers.

SUBSCRIBING MEMBERS

Eight Officers' Messes and Units were enrolled as subscribing members during this period.

The Journal of the United Service Institution of India

Vol. LXXXIV

JULY 1954

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The views expressed in this Journal are in no sense official, and the opinions of contributors in their published articles are not necessarily those of the Council of the Institution

EDITORIAL NOTES

Truce in Indo-China

Statesmanship has prevailed at the nine-nation Geneva Conference on Indo-China. Ten weeks of continuous negotiations have brought about agreement to end the eight-year-old war which was threatening the peace of the world. In any negotiated settlement both sides have to make compromises, and therefore neither side can be completely satisfied with the final terms. But considering the alternative and all that it implies from their respective view-points, both sides know they are the best that could be had under the circumstances, and have reason to feel a sense of relief from imminent tragedy.

A stage had been reached in the Indo-China war when it was clear that French arms could not alone effect a military decision. France was on the contrary finding the operations a great drain on her resources. Direct interference by other powers would perhaps have produced a pattern on the Korean war model, ending in another stalemate. If to avoid such stalemate tactical use was to be made of atomic weapons, there was no saying whether it might not have led to the strategic use of the Hydrogen Bomb by the other side. The area of conflict would have spread and the third world war would have been upon us. We have been spared all that for the time being.

Although not officially represented at the Geneva Conference, India was in constant touch with its progress through the Prime Minister's personal envoy on the spot. Her unofficial role of mediator has had a great deal to do with the course of the negotiations. This was a logical sequence to the lead already given at the Colombo Conference.

The cease-fire in Viet-Nam, approximately at the 17th Parallel, does not mean that the country is being partitioned permanently. There is provision for elections within two years for the re-unification of the two parts. Laos and Cambodia will be neutral territories. The French accept the independence of the three Associated States. To supervise the implementation of the armistice agreement, an International Armistice Supervisory Commission consisting of India, Poland and Canada has been set up, with India as chairman. India has accepted a great responsibility in the cause of peace.

Patterns of Warfare

Just as the world has divided itself into two ideological camps, it appears that the two camps have of necessity divided the art of warfare into two entirely different patterns. Whilst the under-developed countries of the Eastern Bloc have relied upon numerical superiority with guerilla tactics to win their battles, the Western Bloc has become more and more streamlined in the use of manpower. The 'new look' in the armies of the West—both in the USA and in the Continental NATO defences—has meant a drastic cut in manpower in favour of more modern equipment and heavier armaments.

Strategy is based as much on existing circumstance as on military needs. Social and economic conditions in the West—their highly industrialised economy, shortage of manpower, and their 'built-up' topography—dictate the kind of warfare which is most likely to gain advantage over an enemy. Highly mechanised, swift-moving war will be the object of Western arms. To depend entirely on human masses and guerilla tactics in these circumstances would obviously not make for success. This is, of course, easily understandable. The converse is not so readily accepted.

In the East a highly mechanised army, road-bound and tied down to built-up bases, cannot operate with the same amount of freedom and 'abandon' as a guerilla force of the types which have become familiar after several years of

communist technique. This is not to say that an army which has the advantage of modern arms should voluntarily surrender that advantage. On the contrary, it has been proved in Korea that even the strongest and largest concentration of sheer manpower will in the end spend itself against a modern defensive position if warfare ever develops into the static or positional type—which it must eventually do. It is, however, in the more fluid stages, when territories are vast and mass movement possible, that guerilla warfare must be met with something more mobile and adaptable than mechanised warfare of the Western type. This, it is felt, is the lesson of the recent past, and it is a lesson which has been consistently ignored.

The fall of Dien Bien Phu was a victory of massed warfare against modern arms. It is true that a certain amount of heavy equipment was employed by General Giap, such as 105 mm heavy artillery, 3.7 in anti-aircraft guns, Russian made motor transport and other items of imported equipment; but in the main it was a guerilla army using massed strategy that defeated the French forces in Dien Bien Phu, and it is a massed army which is concentrated in the Delta region now.

"It is not armaments but numbers which will make a difference in Indo-China", a high-ranking French official has stated, "and the Viet-Minh have the numbers on their side". Almost totally lacking in any aircraft and armour, the Communists have been pushing in the French on all fronts. In Dien Bien Phu it was seldom that they offered face-to-face combat to the French (except, of course, in the closing stages of the siege). Their "mole-man" tactics, as the French termed their digging-in and night-warfare methods, seldom gave the French an opportunity to use the full superiority of their arms against them. The main advantage of the Viet-Minh was their numerical superiority—a concentration of some 140,000 against the 12,000 in the beleaguered fortress. In these circumstances, as with the Chinese in Korea, General Giap was able to accept the high casualties which were inevitable in this type of warfare—but in the end his steam-roller strategy had the necessary effect. Here, of course, psychological factors have to be taken into account.

The New Look in NATO

In a recent press interview in Western Germany, General Sir Richard Gale, Commander of the Northern Army Group,

discussed in general terms the extent to which the NATO forces have been equipped with the latest weapons. It was the outside world's first glimpse of the New Look in modern armed forces.

Operation 'Battle Royal', code name for the exercises to be held in Western Europe in the autumn, will try out the New Look, said the General. Some 140,000 men of the NATO forces will get their first large-scale experience of atomic warfare. The theme of the whole exercise, in fact, will be woven round the use of atomic weapons not only by NATO troops but also by the 'enemy'. "The strategy and tactics adopted", added General Gale, "will be in direct relationship to this new major factor in war". Sufficient atomic guns are being put at the disposal of the forces taking part by the US Army Commander in Europe, General Hoge. The guns to be used will be the 280 mm atomic guns (which can fire an atomic or an ordinary high-explosive shell). The aim of using these guns at this stage will be to provide commanders the opportunity of "acquainting themselves with these weapons, their conventional and atomic capabilities, the all-weather role and accuracy of the guns, and their deployment". Another new item of equipment to be used in manoeuvres in Europe for the first time is the new heavy-gun tank, the Conqueror, which has several new features in suspension, power, control and transmission. It is armed with a more powerful gun than the 20-pounder of the Centurion. It is also more heavily armoured, though the extra weight involved has not interfered with the manoeuvrability of the older design.

It is interesting to note that as far as the infantry is concerned three new items of equipment are to be tried out during these exercises—the new F.N. 300 rifle, a six-wheeled armoured personnel carrier, and the new battalion anti-tank gun.

Two copies are required of all articles sent to the Editor. These should be typewritten with double-spacing, and on one side of the paper.

AN I.D.C. FOR INDIA

H.M. PATEL, I.C.S.

Lecture on Tuesday, 6th April, 1954

[With Air Vice-Marshal A.M. Engineer, DFC, in the Chair]

THE CHAIRMAN: We are very fortunate to have with us Mr. Patel who has kindly agreed to give a talk to us today on "An Imperial Defence College for India". I am sure you will agree with me that we could not have had a better person than our last Defence Secretary to speak to us on this important subject. I will not keep you any longer but ask Mr. Patel to give us his views. Mr. Patel:

LECTURE

THE objective of the Imperial Defence College, as described by Field Marshal Sir William Slim, who was its Commandant in 1946 and 1947, is to produce a body of senior officers of the fighting services and civil officers who would be capable of holding high commands and key appointments in the structure of Commonwealth defence both in peace and war. Experience has shown that in modern Wars, the military and civilian effort has to be so closely integrated that it is absolutely essential for all those who are responsible for planning in peace and who might be responsible for the execution of those plans in war, to have not only a full grasp of their own special subjects but also a clear appreciation of all aspects of national life—military, scientific, industrial, economic, financial, political and social. It is no less important for them to have a sound knowledge and appreciation of the world economic situation, of international relations and of the trends and developments which influence international political developments of at least the more important countries of the world. How does the I.D.C. set about achieving its task? The fact that its students are all experienced men who come there having already achieved a position of some distinction in their respective fields makes the task at once easy and more difficult—easy because the students are all men of considerable ability and with quick grasp; difficult, because they come at an age when in many a respect they tend to be somewhat set in their ways and thinking. However that may be, the I.D.C.'s methods have proved

successful, for men trained by it were among those who held most of the key appointments during the last War, and held them with marked competence and success.

THE COURSE

The I.D.C. seeks to give its students an idea, on the one hand, of the great complexity of problems that confront men and Governments today and, on the other, of the effect both on national and international policies of the adoption of one or the other of the several solutions of those problems. Lectures by distinguished men of affairs, politicians, soldiers, diplomats, civil servants, professors as well as practical business leaders and industrialists enable students to obtain a first-hand account, as it were, of how these problems strike those who are actually concerned whether in formulating policies or influencing their formulation or with implementing them. During vacations, students are taken out to visit other parts of the Commonwealth, Middle East and Europe, and these visits give students unique opportunities of seeing industrial plants, of getting to know civil and defence organisations of different countries, and appreciating why they differ in certain respects in their form or in their working if they are similar in form, and of meeting and discussing matters of general importance with knowledgeable men of those countries. All this is supplemented by selected but extensive reading by the students themselves and this process of absorption of knowledge derived in these varied ways is crystallised as it were through set detailed studies of specific problems. Students are grouped together into syndicates for the purpose of such studies and each syndicate produces its own solution after a thorough study by, and discussion among, its members. A careful comparison of the different approaches and different or even identical but differently expressed opinions of different syndicates provides very interesting and instructive lessons. It is in resolving these problems in this manner against the background of his knowledge and experience, of the knowledge and experience contributed by his fellow students, of the ideas thrown out by the visiting lecturers and of the study of a wide range of books, that the student really educates himself. He realises the vital necessity of ascertaining and sifting facts. He appreciates the danger of insidious propagation of falsehoods through suppression and selection of facts into which nations, the press, politicians and pressure groups indulge the world over. He discovers the extent of the basic similarity of human tendencies and, above all, acquires a healthy respect for the

other fellow's point of view and ceases to be dogmatic. The I.D.C. course is designed both to broaden the student's outlook generally and to sweep away old prejudices and pre-conceived ideas. From the point of view of the earnest student—and they are all earnest who attend the course—the year at the I.D.C. is in the nature of a sabbatical year, when he can indulge in much longed for reading and thinking and discussing matters of common interest with keen and agile minds enriched by experience, rarely encountered elsewhere in such numbers and such variety. The provision of such opportunities for thinking, reading and discussion, free from the burden of normal departmental duties, constitutes not the least of the I.D.C.'s benefits.

A START CAN BE MADE NOW

A number of officers of the fighting forces and of the civil service in this country can now speak with greater personal knowledge about the I.D.C. and the training it imparts than I can. If I, nevertheless, venture to talk about it, it is only because I have long been of the view that we should have set up some similar institution in this country as soon after Independence as possible. It is one of my great regrets that I have so far failed to get all concerned to agree with me not so much as to its need, for they are all agreed on that point, but as to the urgency of bringing it into being. There are undoubted difficulties in the way, but provided we look, not to the form which matters but little but to the substance of the I.D.C., we should, I am satisfied, be able to overcome these difficulties. We shall necessarily have to accept certain differences in organisation and training facilities. Thus, we cannot obviously provide the same variety of experience among students which is provided at the I.D.C. because of the fact that students from all Commonwealth countries and even the United States attend this course, but the essence of the I.D.C. training can nevertheless be provided in that students here also will be able to meet and discuss matters of national importance against the background of their joint experience, covering all parts of our large country with conditions which differ vastly from State to State. Likewise, instead of an year's course, it may be found advisable, at the outset at any rate, to organise only a half-year's course, for, we may well have difficulty in providing the necessary number and variety of lecturers and speakers of adequate calibre all through an year. Nevertheless, freedom from the normal routine and pressure of files and the rubbing of shoulders with colleagues and fellow-officers drawn from different

spheres and parts of the country even for six months would make the course amply worth while. We may find it difficult, again, to spare as many of our best men as we should like, to act as Instructors at the institution and there may even be difficulty in sparing the requisite number of officers of the Armed Forces to take the course. These, however, are all types of difficulties which had they been heeded by our leaders, would have put off the nationalization of our forces for yet another 10 or 20 years. Provided we realise that the establishment of such an institution is vital from the national point of view, we shall find it quite feasible to surmount these and similar difficulties. Let me endeavour to explain why it is essential, to my mind, to give to the establishment of such an institution the very highest priority.

WHY IT IS ESSENTIAL

For a variety of reasons, the officers of the Armed Forces and the civil servants have but inadequate knowledge of the organisation, problems and difficulties of one another. Again, because of historical reasons, even an otherwise well informed civilian of this country has scarcely any knowledge of matters military. Our Armed Forces, having inherited not the democratic traditions of the British Army but those of the British officers of the Indian Army, tend to look upon civilians as either of no account—as indeed was the case so far as the Armed Forces then were concerned—or as persons who should be kept at arms length. They had then deliberately cut themselves off from the knowledge of civilian developments and organisations and have not yet wholly overcome that reluctance. It is obvious that unless this ignorance is removed and identity of interests established, we cannot really equip ourselves adequately for overcoming our enormous handicaps and achieve the maximum possible social, economic and industrial development. It is vital, therefore, for us to take such steps as would enable us to achieve this ideal in the shortest possible time and ensure that our civil servants, soldiers, sailors and airmen alike—and in particular those who are destined to hold key appointments—acquire a sound grasp of the implications of our federal constitution, and of the vast variety of problems that have to be solved in a democratic set up in a world where even neutrality on the part of a small country or of a large but under developed country, has become difficult, if not impossible, and is indeed resented even when its genuineness is not in doubt. To slightly vary the turn of phrase employed by a wise critic and thinker, History will not forgive us

our mistakes, whether they be of omission or commission, merely because they are explicable in terms of ignorance of basic facts and tendencies by our soldiers and civil servants.

The ignorance of the civil servants in India about military matters is so complete that I will not dilate on it. We may accept it as a self-evident and incontrovertible fact. It needs to be mentioned, however, for, only too often one tends to forget it, particularly when one seeks to compare the organizational and administrative set up in the United Kingdom and here. Civil servants in the United Kingdom start with the advantage of having quite a good working knowledge of military matters and terminology. Almost every civil servant has been at least a member of the Officers' Training Corps, training in which gives surprisingly good basic military knowledge. Incidentally, that is another of the more important reasons for establishing units of the National Cadet Corps in every school and college throughout this country. It is this general familiarity with military matters and the absence of any difference in the general outlook on defence matters in the U.K. that makes it possible for them to accept certain types of organisations which are not likely to be at all useful to us. The basic principle may be acceptable but a different form becomes unavoidable. We may thus consider that the British system of the Army and Air Councils and the Admiralty Board is sound but for a number of reasons cannot adopt it in its entirety in India. We have considered it advisable to retain the concept of the Commander-in-Chief appropriate to the British days and have accordingly sought to adapt it to meet the requirements of a parliamentary democracy. The soldiers', sailors' and the airmen's ignorance of civilian affairs may not be so obvious, for, they all start out as citizens and retain through their families and friends their citizen connections while still in service. It is, however, the mental attitude which historical reasons have developed in them that misguides them and produces serious misunderstanding.

MACHINERY OF GOVERNMENT IN A DEMOCRACY

Few in August 1947 had any very great idea of the constitution of the country or the position and the responsibility of the States *vis-a-vis* the Centre or the role the civil services play or are expected to play in a democracy. And while there is far greater realisation of all these aspects of the country's life and organisation today, there still persist misapprehensions. Thus, for instance, in commenting upon a statement I had made

sometime ago that in a democracy the ultimate control of the defence machinery must unquestionably be in civilian hands, a critic, who calls himself Scrutator, says that while this statement was incontrovertible if it meant the control by the politician, it could not be accepted if it meant the control of the civil servants. I agree with him without any mental reservation. It is evident, however, that in this assessment he is making the mistake, very common not only amongst defence personnel but even among the public, of confounding the instrument for the person handling or guiding the instrument. The civil servant only operates under the authority of the political Minister. In a democracy such as ours, it is the civil service which has necessarily to provide the requisite measure of continuity of knowledge and experience. To expect the politician to be able to draw upon some innate instinctive sources of knowledge when placed in a position of authority is to expect the impossible, however able he may be. He can only bring to bear on the problems of his Ministry mature intelligence and ability to judge once the evidence is placed in front of him. It is necessary for him to have available an objective marshalling of facts and evidence and it is the business of the civil servant to do this for him. In regard to Defence, undoubtedly in certain matters the Minister would and should look to his Service Advisers, but even in matters of a pre-eminently military nature, the civilian Minister, as indeed at times the Service Officers themselves, may benefit by drawing upon the knowledge and experience of the civil servant. In the Defence organisation, all major matters of policies are today discussed and decided in the Defence Minister's Committee, while the Chiefs of Staff Committee has a right in certain matters to approach direct the Defence Committee of the Cabinet with the prior knowledge of the Defence Minister. What is important to remember is that in a parliamentary democracy, the machinery of Central Government is complex, and Parliament, Ministers and the civil servants all have their definite roles to play. None of them thus should be thought of in isolation ; they act and react on each other. Let not the conditions during this undoubtedly transitional period more-over befog our judgments. It so happened soon after Independence that the senior civil servants were among the most experienced in the country in matters of administration and organisation and, therefore, necessarily played a rather more important and more prominent role than they would do ordinarily. This is not likely to be so in future.

At the same time, I would like to warn against any tendency to consider that the expert's views do not require to be scrutinised. Ex-

perience the world over has shown that high attainments in some branch of science and learning are compatible with ignorance and even perversity, where practical issues are involved, and wisdom is not the necessary concomitant of experts in any one field. Examinations of proposals, wherever they emanate, by more than one person or by a Committee, is almost the rule in Government, and such examinations and consultations are not only unavoidable but essential for the proper running of democratic Government.

The principle of investigation, thought and study as preliminary to action, has always been recognised and respected by the services ; what is stated here is only an extension of it. The general acceptance of the duty of investigation as preliminary to action in all spheres of Governmental activity would be of tremendous value. Ministers could lay down for their respective Ministries what priorities are to be assigned to studies of various problems. It might be well to set up in each Ministry a Standing Committee of the principal administrative officers whose duty it would be to examine the ideas for future action which might be thrown out by the Minister himself or by others. This Standing Committee would meet regularly to watch progress on studies that may have been initiated, to attempt to set out new policies for the consideration of the Minister and to modify policies which may have already been formulated, but which require revision in the light of fresh evidence. Such departmental planning should be linked by an inter-departmental planning body. It is important to recognise the value of co-ordinating departmental plans and current departmental thinking. The problems which face Government today are so varied and so complex and yet so inter-related that a measure of flexibility is necessary in tackling them. And this flexibility should not be absent in the methods adopted for studying them.

TRAINING IN THE RIGHT SPIRIT AND APPROACH

The foreign policy of our Government brings with it certain inevitable consequences, and underlines, to my mind, the urgency of having in the country as many men trained in the I.D.C. spirit and approach as possible. A nation's foreign policy is but a reflection of its philosophy of life, and the domestic and foreign policies, as has been rightly said, are but the two faces of the same coin. We have decided to raise the standard of living of our people through self-help and hard work, welcoming outside help of course where it is forthcoming, but not seeking it at the cost of any vital

principle, and educating our own people out of their age-old prejudices, instead of adopting totalitarian methods or going all out for foreign aid. We have thus deliberately accepted certain limitations to the rate of our internal development ; for the sake of similar principles we have also accepted the risk of being misunderstood abroad. We have left no one in doubt of our love of the democratic way of life. While we do not ignore the warnings against the danger of Communism, we maintain that we must fight that too with methods which do not endanger the very institutions which we are anxious to protect and preserve. Having thus voluntarily decided upon the harder road, we should see to it that we are at least equipped to travel along it as quickly and as successfully as possible. It is for this purpose that we need men trained to think comprehensively and to guide action wisely. It becomes as important for the Officer of the Armed Forces as for the civil servants who are destined to influence policy to have, apart from a sound knowledge of their own respective subjects, a much more than superficial impression regarding subjects of vital basic importance, national development and national thinking. The population problem, the language problem, what should be the right policy of education, the problems of land reform and rural development generally, and finally, the problem of industrial development, have all to be studied and understood in their proper relation to each other and a balanced approach achieved. The impact of these problems on defence is very real and our military thinking must necessarily take note of it even as the civil servants and Ministers concerned directly with tackling these problems must never take it for granted that the solution for these problems can safely be sought without giving adequate consideration to their impact on the defence of the country. It is equally important for civil servants holding key posts to acquire sufficient understanding of military matters, including logistics to appreciate the needs and demands of war. Finally, there must be adherence to basic principles and moral values guarding against dividing the world into water-tight compartments, and capacity to see objectively and dispassionately the facts of international life. The defence of this country is not merely thus a matter for the Armed Forces ; it is going to be very much a matter for us all, both at the Centre and in the States. We must act in a co-ordinated manner, on the one hand, to build up the most efficient and well-equipped armed force of which we are capable with our resources and, on the other, to develop civil and defence industries capable of sustaining a determined resistance against any attack, all the while gearing the country's administration to

sustain the people's morale and meeting the needs of the defence forces over a prolonged period of emergency.

A NATIONAL DEFENCE COLLEGE

If then such training as is given at the I.D.C. is essential, what ought we to do? The I.D.C. at present accepts only two or at most three students from India every year. If we consider the training is of value as we obviously do, we ought really to be arranging for the training of at least 40 persons to meet the needs of the Armed Forces and of the civil service of the Centre and of the States. It is as vital for the civil servants who are to hold key appointments in the States as for those who will hold similar appointments in the Centre to acquire this balanced approach to the country's problems. As for the Armed Forces, since it is imperative to secure the maximum value out of our limited resources, there must be concentration on quality everywhere, in equipment as in men. We must be imbued with a spirit of adventure and not let mediocrity rush us into ways of immediate prudence and caution and ultimate disaster. The more officers, therefore, we can train to be capable of such forward and able yet cautious and balanced thinking, the better it will be for us. The National Defence College of my conception therefore would be designed to train some 40 picked officers every year. To begin with, however, we may find it difficult to depute so many officers, particularly as they must be officers of the highest calibre capable of benefiting from the training and of enriching that training itself by the contribution they themselves make by discussions and studies at the course. It is also important that the civil officers should not preponderate at the course and, in any case, the number should not exceed that of the service officers. We may, at the outset, be content with 20 to 25 of whom at least 12 may be from the services and the remaining from the civil servants at the Centre and from the States. The syllabus for the course need not be detailed or complicated, but the training must be designed to produce a body of senior officers of the fighting forces and civil services who will be capable of holding high command and key appointments in the structure of the country's defence, economy and administration both in peace and in War. Even if a few persons trained in this manner have the talent for seizing opportunities when they are presented to them—and opportunities do offer themselves; what does not happen usually is the coincidence of the opportunity with an individual trained or gifted to seize it—the expenditure and effort in running the College will have been amply justified.

DISCUSSION

MR. PHILIP MASON : Would the establishment of an I.D.C. in India imply stopping the present practice of sending officers to the I.D.C. in England ?

THE LECTURER : Indeed no ! The I.D.C. will still be of value to us. The main point of my talk today is that it is necessary that the benefit of I.D.C. training should be available to a fairly large number of officers. At present the Imperial Defence College in England has vacancies for only two or three of our officers every year whereas, according to me, we should be training at least thirty or forty. This we can do if we have a National Defence College organised broadly on the lines of the I.D.C.

MAJOR-GENERAL J.N. CHAUDHURI : What was the reason for this desirable object not being attained in spite of the lecturer's efforts when he was Defence Secretary ? How should we set about it now ?

THE LECTURER : In 1949 the Chiefs of Staff felt they could not spare enough officers for the Course. Also they thought that it would not be possible for them to make available instructors of the right calibre. We tended to over-emphasise the difficulties.

MAJOR-GENERAL J.N. CHAUDHURI : Would it be more practicable to start on a more junior level—say on the Joint Services Staff College level—by including civilians also in the course ?

THE LECTURER : No, I do not think so. The officers who go to the I.D.C. will be of a more senior grade and with far greater experience than those who go to the Staff College. The civilian will not benefit much by the Staff College Course, nor will his presence there contribute much of value to Service officers.

COMMODORE R.D. KATARI, I.N. : The aims of the proposed College as I understand it could, it appears to me, be achieved by any study group. Will you please comment ?

THE LECTURER : A study group will not be the same thing. It is necessary for the officers to get away from their regular work and have all the time they need for reading and discussing. Quite the most valuable aspect of the 'I.D.C.' is that the time spent there is in the nature of a 'Sabbatical' year.

THE CHAIRMAN: Just before we came into the hall Mr. Patel informed me that he had very little time and as such he was unable to prepare anything but a very sketchy precis for his lecture. After having heard him, I am sure you will agree that this lecture was anything but sketchy and that we have received a most interesting and instructive talk which should provide us with plenty of food for thought. This is an important issue and I am glad to notice that the two other Deputy Chiefs of Staff who are in the audience today have already started taking considerable interest in this subject. I, therefore, feel confident that this problem will receive active consideration in the right quarters in the not too distant future.

There can be little doubt that all modern wars are total wars where it is not only the effort of the Defence Services as such which results in victory but the combined effort of the nation as a whole whether it be industrial production, or finance, or food or communications. They all play an equally vital role in ensuring the maximum war effort of the country. This can best be done by associating the Civil Servants with Defence requirements on the lines suggested by Mr. Patel. Talking about communications we have a very recent example in what happened only a few days back. In spite of all the pains taken to ensure a well planned military "operation" the actual execution of this "operation" may well have been paralysed due to certain communication difficulties. If you will recollect, even the Commanders-in-Chief were unable to reach the seat of operations in time due to traffic block on the road to Tilpat during the Air Display held by the I.A.F. on its 21st Anniversary!

In conclusion I would again like to thank Mr. Patel for the very interesting and informative lecture that we have had today. (*Applause*)

MOBILITY AS A FACTOR IN WAR

COLONEL RAJINDAR SINGH, M.V.C.

"Lord WEN said: What is of first importance in operation of War? WU answered and said: Lightness if men be free to move, the fight prospers."

[From "*The Book of War*"—Chinese 5th Century B.C.]

IN an article on mobility as a factor in war it is necessary to discuss what importance mobility has held in the conduct of past and present operations, when it will be increasingly evident that a force with a high degree of mobility has invariably proved successful against immobile forces even when the latter have been numerically superior. It will also be necessary to discuss the extent to which modern developments in equipment are likely to aid (or hinder) a commander in achieving mobility in future warfare.

DEFINITION

The definition of mobility given in the Field Service Regulations is, "Mobility implies the power to manoeuvre and act with rapidity, and is the chief means of effecting surprise." It seems fairly easy to understand such a definition but its correct application in battle is quite a subject by itself. For instance, it will be quite wrong to think that if you have the fastest means available you can always achieve the maximum mobility. You have to analyse carefully the different factors which constitute mobility and study closely the conditions prevailing in respect of an operation before mobility can be achieved with success.

HISTORICAL BACKGROUND

Warfare of Old

Before we discuss the various points that closely affect mobility, let us look back through the pages of history and examine how it came into use and how it was applied by successful commanders in the past on various fields of battle. One reads in the classics of how in olden days, battles were fought in a most chivalrous manner. Sometimes only the kings or commanders of the rival armies met in single combat and the result was accepted as deciding the issue. At other times, commanders sent their envoys to the rival camps and agreed on certain conditions like the place of battle

and the time at which the forces would meet. The famous fights of Rustum and Isfandyar, Rustum and Sohrab and other known knights are a few of the classical examples which illustrate so vividly the old time method of warfare. Slowly and steadily the old chivalrous order of warfare changed yielding place to the new method of sieges and sallies. Military history offers innumerable examples that illustrate this type of warfare; the attack on Rome by the Etruscans when Horatius won fame by guarding the bridge over the River Tiber, is one of the well-known examples of this type of warfare.

The Appearance of the Arm of Manoeuvre

Although the horse was used by past military leaders in their battles in one way or another, the first leader who successfully employed cavalry as an arm offering mobility was Alexander The Great. Alexander's two famous battles, of Gaugamela against Emperor Darius of Iran and of Hydaspes against King Porus of India, are outstanding examples of the success with which he fully organized and integrated into these battles the arm of manoeuvre, the cavalry.

The famous Commanders of the later ages such as Hannibal, Belisarius, Genghiz Khan, Timur and others likewise proved successful in different battles through achieving a high degree of mobility against comparatively immobile forces. During many of these battles the numerical superiority lay with the enemy. The speed with which Genghiz Khan, for example, conquered countries stretching from the Sea of Japan in the East to the Adriatic Sea on the West and brought down the mighty Empire of Khwarzm, the Shahe-Shahan-i-Iran, shows to what extent mobility could be instrumental in winning battles.

Let us now revert to the subject of analysing some of the basic points that directly affect this important factor in War, incorporating where necessary some modern examples.

MAIN ESSENTIALS OF MOBILITY

Speedy Movement of Troops

We all know that the aim in the conduct of any war is to knock out the enemy in a manner that will break his will to resist. As a preliminary to achieving this aim plans of operations are prepared in which specific areas are selected for striking down the enemy. These areas naturally have to be those which suit us most and which put the enemy at a disadvantage. To be able to achieve victory over the enemy, troops there-

fore have to be moved out in the shape of an offensive to these selected areas. The first important point that at this stage closely affects the factor of mobility and which should be given utmost consideration is Speed. It is here that we start working out the speed with which troops should be moved, positioned, and employed against the enemy; the idea being to strike and to destroy the enemy before he gets a chance to strike us. Thus by speedy movement of troops, say from A to B, we snatch the initiative and effect surprise on the enemy; this offers good chances of disrupting the enemy's impromptu or even considered planning and the results of battle under such circumstances are bound to be favourable to us.

Next come the means with which you can move the troops about. The normal means that are made use of for achieving mobility vary from the horse to the aeroplane; the actual mobility that these means may offer at the appropriate time again varies according to the geographical and other conditions obtaining in regard to a set operation. We shall examine this question closely as we proceed with further discussion on this subject. The point that has come out clearly so far is that:—

To be able to strike a decisive blow on the enemy at the time and the area of one's own choosing the means made available to move troops for the completion of their given task should be the speediest possible.

Speedy Carriage of Weapons

It is no good forestalling or surprising the enemy by producing an excellent plan and by using the most mobile means to move troops if they cannot carry with them the most effective types of weapons required for winning the battle, and that too in sufficient quantity. Or if these cannot be carried by the troops themselves, then the weapons should be delivered by other means at the time and place required. As an example, during World War II, 1 Airborne Division (British) was dropped speedily by the Allies by Air at their objective, the Arnhem area, on the 17th of September 1944. The enemy was completely surprised and the operation was carried out successfully in its initial stages. The subsequent provision of appropriate weapons like tanks and other supporting arms to this formation, however, could not be effected in time as planned. The result as we all know was a failure. It is therefore correct to deduce that:—

To be able to exploit fully the advantages of mobility, troops should be equipped and provided with suitable weapons in the maximum quantity required for the type of operation on which they are being employed.

Speedy Formulation of Plans and Their Execution

A nation—or any international bloc—which formulates its plans for the operation of war well in advance and with speed, directly or indirectly enhances the mobility of its armed forces and has better chances of attaining victory over its enemy. Besides other examples that one can pick up from the pages of military history to support this statement the nearest is the astounding victories scored by the Germans whilst occupying Europe during 1940-41. Let us therefore study as concisely and critically as possible how certain important elements influence the formulation of speedy war plans.

Advance information on all aspects of intelligence in respect of a potential enemy or even allies is the first essential which forms the basis of any type of plans and should be very carefully taken in hand from the outset. The method of collation and logistical maintenance of general staff intelligence data therefore should be continuous and kept up to date even during peace years. It is from this data that the joint planning teams at the highest level will be formulating their plans of war. Any missing piece of the intelligence picture is liable to retard the speed of the operation in hand.

Next to this comes the team work of all concerned at different levels. From the joint planning committee of the Chiefs of Staff down to battle formations, co-ordinated team work, methodical use of staff duties, suitably balanced organisations of different planning teams and speedy operational procedure whilst progressing through different stages of the plan at all levels have all a direct bearing on enhancing mobility and on offering surprise in the field.

Further to the above, the giving of clear-cut orders at all levels and the observance of correct battle procedure are important factors that help in saving time. At formation level and below the issue of orders during the normal chain of command, the individual reconnaissance of each commander after the receipt of his higher commander's orders, his own appreciation and orders, and all other necessary stages in the chain of command require time. If these stages are allowed to progress successively a great deal of time will be wasted. On the other hand if these successive stages are allowed to proceed simultaneously, it will save time and thereby enhance mobility.

Another important point that has a direct bearing in speeding up mobility is a sound system of inter-communication. Means of communi-

cations established between all headquarters therefore should be sound and flexible. Information and orders should pass up and down in the shortest possible time.

Administration

Any mobile arm which is employed to carry out a given operation must have as few administrative encumbrances as possible. It should move light, and with as few administrative trains as possible. In this respect Genghiz Khan used mobility in its highest degree. His armies of mounted men carried few administrative loads. Under his command the power of manoeuvre was raised to its peak and the administrative train cut to the barest minimum. His armies lived on the land. The majority of his mounted soldiers had three spare horses. One was used as a charger, two as spare chargers or even eaten when necessary and the fourth (which normally was a mare) yielded milk for his daily requirement of Kumiss.

Although the principles of mobility since Genghiz Khan's days remain the same, the method of administration has altered with the changing methods of warfare. The administrative demand of the present-day mobile arm is very much different to what it used to be before. The setting up of firm bases and the smooth working of the complicated administrative machinery are essential requisites of the modern commissariat system. On the administration side therefore mobility nowadays demands that:—

- (a) *Mobile troops should move out with their administrative train cut to its minimum.*
- (b) *Adequately workable arrangements should be made to meet the subsequent demand of supplies and equipment.*
- (c) *To meet these demands satisfactorily, firm bases should be set up in areas secure from enemy attacks.*

Flexibility in Planning

When a commander makes such a rigid plan that he cannot change it quickly when confronted with unforeseen circumstances, he lacks flexibility. He will lose valuable time in working out new plans while a clever enemy will use this time to drive home his advantage to the utmost. On the other hand if the commander has a flexible mind and makes a quick change in the plan if things are not going well enough, he will gain the advantage of mobility.

A very good example of this is Field-Marshal Montgomery's attack on the Mareth Line in March 1943. He attacked the Northern flank of the enemy which was strongly held. The attack started off all right but was held up eventually. Instead of persisting in his original plan Montgomery changed it entirely. He switched all his available armour to the Southern flank, and by this manoeuvre forced Field-Marshal Rommel to withdraw his forces through the Gabes Gap.

Manoeuvrability

A Commander who possesses the means of speed and manoeuvrability, and enough vision to utilize these factors to advantage can invariably outflank and hit the enemy's weakest spot. Whilst possessing the power of manoeuvre, if through any unforeseen circumstances he hits the enemy where he proves strong such a commander would have every chance to disengage, go round and hit again at some other weak point of the enemy. In so far as the use of speed and manoeuvrability was concerned Rommel proved to be a master tactician in the battle-field. His move forward from Gazala-Bir Hacheim line to Alamein in June 1942 is one of the examples that can be quoted in this connection. The speed with which he manoeuvred his troops into action against the 3rd Indian Motor Brigade and 4th Armoured Brigade during the initial stages of his push and against other Allied formations at the subsequent battles of Knights Bridge and Tobruk shows what advantage manoeuvrability can offer in the field of battle.

Whilst discussing the speed with which the mobile arm could be used effectively against superior numbers, one is reminded of the Ardennes offensive. In spite of the fact that the Allies had the initiative and enormous superiority in air power and land forces, the Germans succeeded in launching a counter-offensive which almost drove the Allies back across the River Meuse and threatened to cut off the Northern armies from their supply bases. They advanced about 50 miles in three days and their tanks carried everything before them. But the Germans could not gather enough men and material to maintain the push, and with the clearing of weather the Allies' air force began playing havoc, forcing the Germans to retreat. What might have happened if the Germans had secured reserves of men and equipment, is a matter of conjecture.

To use manoeuvrability to advantage the state of training of the troops to be employed should be of a very high standard and the organisation of the force evenly balanced. For instance X Corps as organized by

Field-Marshal Montgomery in the Middle East Theatre had great mobility and helped considerably in ousting the Axis Forces from Cyrenaica. The organisation of the corps was two Armoured Divisions and one Motorised Division. The same formation with this organization would not perhaps have had that much mobility if it was used, say, in an Eastern Theatre of operations, where terrain generally offers more obstacles and is of a difficult nature.

With regard to training, it may be recalled that soon after the battle of Alam Halfa in September 1942, Field-Marshal Montgomery did not follow up his success by pursuing the German forces. He appreciated that his troops were not trained well enough to take on pursuit just then, but once they achieved the required standard of training they pursued the Germans relentlessly from Agheila to Tripoli.

It may be deduced therefore that to gain the power of manoeuvre successfully in the field one should look for the following three essentials :

- (a) *A high standard of troop training.*
- (b) *Balanced organisation of the force.*
- (c) *An acute sense of manoeuvrability in the field commander.*

MODERN DEVELOPMENTS IN EQUIPMENT AND THE FUTURE OF MOBILITY

We have had a few old and new examples showing how some famous military commanders used mobility to their advantage. Let us now consider the future of mobility in the light of modern developments in equipment. Let us also consider which is going to be the future arm of manoeuvre and in what way it will function. The horse has had its day and the mechanically propelled vehicle is under test at present. To start with let us examine what limitations or aids are brought about by modern developments and how they affect mobility.

Limitations Affecting Mobility

- (a) *Dependence on Industrial Resources :*

Modern armed forces are directly dependent on the industrial potential of a country. Industries will be more and more vulnerable to enemy air attacks. To keep our own forces supplied our industries will have to disperse or even go underground because of the atomic threat from the air. The speed with which the field armies of today have to be main-

tained with equipment and other supplies will naturally be slowed down under such circumstances and the mobility of the armed forces will as a consequence be affected adversely. It follows therefore that to keep the mobility of its armed forces functioning a country will need a strong force of fighter aircraft and highly organized anti-aircraft ground defence to prevent an enemy air force from interfering with its industrial production, and subsequent supplies to the mobile forces.

(b) *Susceptibility to Enemy Air Attacks:*

Modern armies are very large as a result of the number of vehicles they have, and hence it will become increasingly difficult to conceal them from the enemy air forces when the latter are equipped with improved radar equipment. As rocket-firing aircraft are very effective against armoured vehicles, this will greatly limit the movement of a mechanised force during day time unless the commander possesses mastery of the air. The alternative will be to move under cover of darkness.

In the Ardennes counter-offensive launched by the Germans in Western Europe, Field-Marshal Von Rundstedt was able to assemble at least 1,000 tanks, 2,50,000 men and thousands of vehicles for the battle. Apart from other factors, it was chiefly due to bad weather that the Allies could not immediately stem the counter-offensive. But when the weather cleared, the Germans had to face a serious set-back; the Anglo-American air force of about 5,000 aircraft smashed down upon the German tanks and supply columns compelling them to pull out. This was a graphic example of the effect of superior air power over the land forces whatever the strength of the latter.

It can thus be deduced that to be able to maintain the mobility of the armoured columns:

- (i) *Air mastery over the area they are to be employed in should be maintained*
- (ii) *troops should be moved during the night, especially when there is paucity of air cover on our own side*
- (iii) *enough air cover should be provided to at least neutralize the*

damaging effect of the enemy air attacks during the day time, and also if possible move plans should be so worked out that the troops are chiefly moved during the night.

(c) *Modern Anti-tank Weapons :*

Field anti-tank guns, recoilless anti-tank guns, bazookas, and anti-tank mines are the main anti-tank weapons that hinder the mobility of armoured fighting vehicles. Recoilless guns are light in weight and relatively cheap to produce. They have low silhouettes and are hard hitting weapons. Mines again have had the upper hand as compared with the detecting devices invented so far; plastic and wooden mines for instance cannot be detected with the detectors in use. All these tank-destroying devices have started effectively to influence the tactical doctrine on the employment of armoured columns in battle. Except where you find hastily prepared enemy defensive positions it would seem very costly to attack the enemy without the requisite support of slow moving arms, especially the infantry. The modern methods of mobile warfare therefore will demand much more alacrity from a field commander than they have ever before. Besides possessing the tactical ability of the standard expected he must have first-rate knowledge of the employment of anti-tank weapons in use and the effective method and speed with which they should be dealt with.

(d) *Radar :*

Radar is another device which assists the defender in spotting the invading aircraft, ship, submarine or tank. This will have to be counteracted by jamming or by some other means if the invader wishes to retain his mobility.

Aids to Mobility

(a) *Infra Red Ray Equipment :*

Infra Red Ray Equipment has greatly facilitated night work. By its use the movement of a mechanised force and its ability to fight at night can be made less difficult than it is today.

(b) *Earth Removing Machinery and Bridging Equipment :*

Earth removing machinery will be used in greater quantities for making tracks, roads, diversions and air fields. With modern

developments in air transportation, the need for air fields will increase especially in the East where such facilities do not exist. As regard bridging, field commanders always want gaps bridged as soon as possible. Hence improvements in the carrying of 'built' bridges of greater strength and span than the ones in existence are visualized.

(c) *Standardisation of Equipment:*

Modern improvements in machinery have made possible a considerable standardisation of equipment. The idea is to have vehicles and other means of transportation fitted with as many interchangeable parts as possible. The manufacture of a standard power unit is also envisaged, which would cut down the cost of production, facilitate training, and simplify repair and maintenance problems considerably. All this is bound to produce increased mobility.

(d) *Air Transportation:*

It is the air arm which, it is visualized, will play a vital role in achieving a high degree of mobility in the future. For the purpose of convenience this subject is discussed under two headings; the near future and the distant future.

(i) *The Near Future:*

The achievement of greater mobility with the help of the air arm in the near future will be possible only if its services are made use of in conjunction with land and/or naval forces. It is now possible to transport light tanks in cargo planes and to drop such equipment as Jeeps and 90 mm anti-tank guns from the air. The seizing of a specified area by the employment of Airborne Troops therefore is now relatively easier. However, because of the inability of the air arm to transport or drop heavy tanks and guns, an air dropped assault force will be limited in its mobility in open terrain. Their subsequent link up with friendly ground troops will therefore be a necessity. If this link up is not done speedily and effectively the story of the landing of 1 Airborne Division at Arnhem may be repeated. It should not however be forgotten that in the type of operations in which the employment of heavy equipment is not considered essential,

Airborne troops can achieve amazing results. The two examples that can be quoted are the capture of Crete by German Forces and the landing of Chindits in Central Burma.

It can thus be deduced that mobility offered by the air arm in the near future will be of a limited nature: i.e. the speedy despatch of troops by air to their objectives, less their medium or heavy equipment.

(ii) *The Distant Future:*

Now a word about the distant future. We have seen that unless Airborne formations carry troops as well as heavy equipment and the requisite quantity of supplies their power of mobility is limited. With modern technical developments it seems quite likely that in days to come medium tanks, SP guns and other heavier equipment may be transported by air. It is also possible that with progressive research and invention the future makes of weapons and equipment will be much reduced in weight while retaining their other qualities. It is likewise true that the nuclear or atomic energy will permit the reduction in the weight of fuel and offer much more speed than the present day aeroplane has. The use of heavy cargo aircraft, the glider, the helicopter, and other such machines for transportation purposes would be much more extensive and practical. With these modern developments in machinery and equipment the chances of our armies achieving a high degree of mobility will increase manifold, and airborne armies under such circumstances will be able to function independently of ground or naval forces.

The air arm is bound to play the most important role in any future war in the achievement of mobility for one's own forces and the denial of mobility to the enemy forces.

CONCLUSION

In conclusion we can state most definitely that to achieve success in battle through mobility it is essential that the fastest means are made available to carry troops and a sufficient quantity of weapons and equipment required for any set operation.

Next must come into play the power of manoeuvre, which can be achieved by:—

- (a) a high standard of troop training;
- (b) use of formations with balanced organisation;
- (c) cutting administrative trains to the minimum; and
- (d) sound handling of troops by the field commander.

To achieve a still higher degree of mobility, the standard of battle procedure must be improved to a high order and the inter-communication system be made sound and flexible.

As for the future, it is considered that despite the deadliness of modern weapons there are even chances for a commander to achieve mobility. The air arm will be increasingly important in the near future, but it will not by itself win the war any more than it did the last one. With the speed of technical advancement in modern equipment it is visualised that in the distant future airborne troops will be able to carry out independent operations through the use of the air arm only. To achieve mobility from the start to the finish of any future war intimate co-operation would be essential between the civilian population and all the armed forces of a nation, or group of nations, and a highly trained reserve which can be mobilized quickly will have to be built up.

In what way the atom bomb, the hydrogen bomb or any other hidden weapon may affect mobility in future is a question that perhaps will be discussed in public only when the next war is on or has ended.

SHIPS AND SHIPPING

COMMANDER V.A. KAMATH, I.N.

THOSE of us who have had occasion to wander about a port and felt its busy turmoil, with ships of diverse nations loading cargo for distant shores, or unloading wares from foreign lands, must have on the first such occasion, felt a desire to know something about the ships themselves, the men who go to sea in them, and the big business that is behind it all. At the time one might even make a firm resolve to take the next opportunity of a visit to a library to study one or two books on the subject. The chances are however that such a resolve suffers the fate of most New Year resolutions !

It has been said that even an island race like the British who live largely on, and by the sea, are not as well informed about shipping as one would suppose. This is indeed surprising ; for apart from any considerations of maritime traditions, the very ability of that country to make both ends meet, is in no small measure due to the earnings of her shipping and allied industry, and as such a matter of concern to every individual Briton. A sublime ignorance of this subject even on the part of the vast majority of educated Indians, is therefore not surprising, if it were not such a great pity ; for India is virtually an island, and the security, progress and prosperity of this country, situated as she is geographically, is linked up with her ability to make increasing progress in the maritime realm of affairs.

The history of shipping, starting from the days of the Galley to its present stage of development, is a fascinating story of romance and adventure. Perhaps the story of man's achievement over nature and the elements, started with his use of sail to drive ships across the ocean in search of adventure and riches. The need for human beings to transport their goods and themselves across the ocean, gave birth to the merchant ship and it is the need for the protection of these ships that gave birth to warships. When one analyses it, it is easy to see that the whole basis of Sea Power is the merchant ship. If there were no need to transport goods and personnel by sea, there would be little meaning in Sea Power. It is the merchant ship, may it be the passenger liner, tramp or tanker, that enables a country to use the sea routes in aid of its war effort, the warships

and aircraft being provided merely to ensure that this ability is not interfered with by the enemy.

TYPES OF SHIPS

Ships can be broadly divided into three main categories according to type. These are the liners, the tramps and ships designed for special service. A popular belief still persists that a liner is something very large and streamlined, and one which invariably carries a large number of passengers. This is not true; for a liner is technically any vessel which runs a regular service between certain ports, in accordance with a previously advertised schedule or time-table. There are passenger liners as well as cargo liners. The liners are really the seagoing counterpart of the railways, with their regular passenger and goods schedule.

A tramp steamer on the other hand, does not necessarily confine itself to a regular line. A tramp ship owner may be compared to a road transport owner, who would be prepared to move goods from any one place to another. At the other end he will naturally look for another load to bring back and thus cover the expenses of the return journey, or if this is not possible will accept a cargo for a third place from where he will hope to pick up a homeward cargo.

A seaman in a liner has a good idea on what day he will be home again, but a tramp seaman rarely knows where he is eventually bound for or how long it will be before he sees his home port again. There are nevertheless occasions when a tramp steamer may be hired by a liner company, to take the place of a cargo liner that is temporarily out of commission or because of increased traffic on that particular route. As a rule, we may take it that liners are operated by a limited number of companies with large fleets, whereas tramp ships are generally operated by a large number of private owners who may perhaps have two or three ships each.

By far the most well known of the specialised class of ships, is the tanker. As the name implies, it is specially designed for the carriage of bulk liquid cargo, which is usually oil. The tanker differs in its functions from other vessels, in that it can carry only one type of cargo and by the nature of its trade is engaged in one way traffic alone. It carries petroleum products from the oil fields and refineries to the overseas consumer and then has to return empty for another load. These tankers are usually owned and operated by the oil companies themselves; the two best known being the 'Shell' group and the 'Anglo-Iranian' oil company. Between them these two

firms own perhaps the largest fleet of tankers in the world. There are also some tankers of the tramp type, mainly under the Norwegian flag, which offer their services wherever required for the carriage of bulk oil.

The tanker is a vessel which can easily be distinguished from any other type of ship, for her machinery and funnel are invariably placed in the after end of the ship, which has the appearance of lying rather long and low in the water. Her decks are free from erections, apart from the bridge structure forward, which also houses the ships officers.

The 20th century and in particular the post-war years have seen a remarkable increase in the number of tankers, owing largely to the increasing use being made of oil where once coal was the fuel, and the great developments that have taken place in the use of the internal combustion and the jet engines. It may be mentioned in passing that India has not even one commercial tanker under her flag. Considering that some 95% of the oil consumed in this country has to be imported from abroad, the danger of relying entirely upon foreign tankers for the carriage of this strategic cargo would be all too clear even to the layman. With the oil refineries going up in Bombay and Vizagapatam, it is understood that the Government are taking steps to acquire a few tankers, in order to ensure that at least a small share of the oil cargo to and from the refineries, is carried in Indian owned tankers. A fleet of two or three tankers would hardly meet India's requirements, but it would nevertheless be a step in the right direction. Indian shipping companies have yet had no experience in the operation of tankers and the gaining of this experience on a small scale must precede any attempt to build up a large tanker fleet.

Rather than dwell at length on the other types of specialised ships, of which there are many, it is merely necessary here to mention some of the more common types of specialised ships; if at least to give the reader an idea of the diversity of shipping. Among these are the whaling factory ships, which are, as the name implies, floating factories where whales caught by attendant whale catchers are processed and their oil extracted ready for marketing. During a season one such ship may process as many as a thousand whales and return with 20,000 tons of whale oil. There are the cable ships specially designed to lay and maintain the network of cables on the ocean bed, which form a vital link in the network of world communications. Another specialised ship is the one built to carry locomotives and rolling stock. The distinctive feature of these ships is the heavy lifting

capacity of their derricks and the arrangement of their holds and hatches. The inside of the hold of one such ship may look something like a railway marshalling yard ashore.

No mention of specialised ships would be complete without reference being made to the great fishing fleets composed of trawlers and drifters, all designed for the particular job of fishing. There are also a number of smaller craft which are there to serve and attend on the larger ships. Such are the tugs which escort the liner to the dock or the quay side, the rescue tugs which go far out to sea to give assistance to ships in distress, the salvage vessels which are used to raise sunken vessels or to assist them when they are stranded ; survey vessels, ice breakers, pilot vessels and many others.

When there is such a diversity of ships, the layman who loosely terms as a boat anything from a 300 ton cargo ship to a 50,000 ton passenger liner, is from the point of view of the professional sailor annoyingly misinformed ! A ' boat ' as is understood correctly, is a small floating craft used for providing communications inside a harbour or as a life saver at sea.

SIZE MEASUREMENT

When discussing the size of a ship, one generally refers to her tonnage. To the layman this would immediately imply the weight of the ship. This is however not always the case, for there are four different types of tonnage which may be used to denote the size of a particular ship.

The ' displacement ' tonnage is the actual weight of the vessel represented by the number of tons weight of water that she displaces when loaded with fuel, water, stores and crew on board. While this is the normal method of referring to the size of a warship, it is seldom used for merchant ships because of the great difference in their displacement, when they are in their fully and lightly loaded conditions.

' Gross ' tonnage is the measure of the total internal volume of a ship reckoned in tons of cubic capacity. A hundred cubic feet of enclosed space is equivalent to one ton gross. This is the usual method of expressing tonnage of merchant ships.

' Nett registered ' tonnage represents the earning capacity of a merchant ship and is a measure in tons of cubic capacity, of that portion of her internal volume which can be used for carrying cargo or passengers. In other words it is her gross tonnage less the spaces occupied by such items as

machinery, crew, bridge, etc. and is a measurement normally employed when computing harbour and canal dues.

Lastly there is the 'deadweight' tonnage which is the measurement in weight, of the cargo, passengers, crew, stores, fuel, etc. that a vessel can carry when fully loaded. In other words it is the weight of all removable and expendable items which a ship can carry.

In comparing two ships, it is necessary therefore to obtain the similar tonnage in respect of both the vessels. A ship with a displacement tonnage of 3,000 may be quite different in size to a ship with a Nett registered tonnage of 3,000.

CLASSIFICATION OF SHIPS

One frequently comes across the terms 'Ocean going' and 'Coastal' in connection with shipping. There are no hard and fast rules which technically differentiate one from the other, but as a general rule ocean-going ships are designed to operate for long periods at sea, in different conditions of climate and weather whereas the coastal ship is designed to operate in limited waters, and cannot normally remain at sea for any length of time.

The difference between a passenger and a cargo steamer may seem too obvious to require any explanation, but it must be remembered that all passenger ships carry some cargo in addition to the passengers and many cargo ships can accommodate a certain number of passengers. From the point of view of the Government, a line must be drawn somewhere in order to determine which vessels must comply with the special passenger ship regulations in respect of hull subdivision, wireless and life saving equipment, etc. laid down for ensuring the safety of passengers at sea.

Any ship which is designed for carrying more than 12 passengers must comply with all the regulations laid down for passenger vessels, and from this it follows that a vessel can be designed to carry up to 12 passengers and yet retain its designation as a cargo ship. There are ships which may carry more than 12 passengers and yet carry a large amount of cargo. These vessels may be classified as passenger-cum-cargo ships.

THE ROLE OF SHIPPING

A country's shipping has two distinct roles ; one in peace and the other in war. To take the wartime role of shipping first, mention has already

been made earlier in this article of the vital nature of this role, in a country which must keep open her lines of sea communications, for the necessary war materials with which to prosecute a war. A further requirement in war is the necessity for transporting troops and war materials from one theatre of operations to another or from the home base to an outlying theatre.

All this is not possible without commercial shipping. Those who have studied the history of the Second World War will remember how the dates fixed for the great North African and 'D' day landings on the French coast were so greatly influenced by the need to build up the vast shipping armadas. In addition, the Merchant Navy also provides the fighting Navy with its nucleus of reserve trained man-power. Personnel of the Merchant Navy already familiar with the sea and ships, require only a short period of training to enable them to take their place in the combatant service. Their specialised knowledge of shipping makes them particularly suited for manning many of the Navy's war-time commitments like the Sea Transport Service, the Contraband Service and the Naval Control Service.

It is therefore for very good reasons that the Merchant Navy is considered by maritime countries as the second line of defence, and it is the open policy of every such country to so encourage and develop its national shipping, that in time of need it is capable of fulfilling its strategic role. One has only to follow the present world trend of expanding shipping tonnage to realise the importance being attached to this subject. In the case of the United States that Government maintains a large merchant fleet at sea by means of heavy operating subsidies; for the operating costs of American ships are so high that competition from the other leading maritime fleets cannot otherwise be met.

Although the merchant ships are not armed like warships, nor designed for fighting, they are invariably in the thick of the fighting from the very beginning of a war. During the last war, merchant ships have taken part in every major sea operation, and the casualties suffered by their crews well exceeded those inflicted upon Naval personnel. In accordance with International Maritime Law, a belligerent warship is entitled to sink a merchant ship only after placing the crew in a place of safety. This like many other rules of warfare, are no longer adhered to by belligerents. Little differentiation is made nowadays between a warship and a merchant ship. Both are targets to be attacked and sunk at first sight and hence the Merchant Navy has sometimes been called the Fourth Fighting Service.

In peace time, shipping is 'big' business, and it is to economics that we must turn to obtain a clue to its major role in peace. If we take the case of India, 95% of whose overseas trade is carried in foreign ships, it means that crores of rupees in freight charges go out of India annually into foreign pockets. It amounts in fact to a form of invisible imports into the country. According to the statistics for 1952-53, 50 per cent of these freight charges went to British shipowners and from the British point of view represented appreciable earnings through invisible exports to India. The actual figures are not available but they are sure to run into many crores.

The effect of shipping earnings on the national economy of a country may be best illustrated from British figures. The earnings of British shipping throughout the world under post-war conditions amount on an average to £100 million annually. It is not difficult to see how this large figure helps to meet any adverse balance of trade. In the year 1939 Britain's adverse balance of trade was in the region of £332 million and in the same year the earnings of British shipping amounted to £340 million. Shipping earnings actually converted an adverse balance of trade into a favourable balance.

The earnings of shipping services by no means exhaust the usefulness of shipping to the national exchequer. In 1949 Britain was building more than half the number of ships being built in the world, and was exporting ships to the tune of £40 million. The strong position of British shipping has made London the leading insurance market in the world. Also it is in the Baltic Exchange in London that most of the world's chartering of ships is done. All these services play a big part in making Britain economically sound.

THE MEN WHO GO TO SEA

It was Dr. Johnson who said that "No man will be a sailor who has contrivance enough to get himself into jail." His reasoning was that in a common jail, quarters were more comfortable, the food much better and the company more congenial, and to top it all he did not run the risk of being drowned! Since Dr. Johnson's days conditions in the Merchant Navy have changed out of all recognition, and the Service has built up for itself a fine tradition of service which the general public recognises only too well in times of national peril, but is apt to forget in times of peace.

Compared to a shore career, the seagoing job has its compensations as well as disadvantages. A seaman in a foreign going ship must inevitably

face separation from his family and friends for long periods at a time. For weeks at a time his horizon is limited to the confines of the ship. His ship is his home, and when he is off duty he cannot, like his shore counterpart, walk off to see a cinema or take a stroll in the park. His work is arduous and often performed in rigorous and sometimes perilous conditions. Finally he is subject to a code of discipline at sea which many a man finds the most unpleasant thing to bear. On the credit side, modern living conditions in the Merchant Service are generally very satisfactory. The minimum standards of accommodation, food and pay must meet Government and international rulings on the subject. He is paid well and most important of all, he has the satisfaction of doing a man's job and seeing the world.

In the old days brawn counted more than brain and this brawn had to be disciplined by the iron fist. The officers were a law unto themselves, the Master in many cases himself the owner, reigning supreme. Whilst discipline is still strict, it is not harsh as it used to be. The amount of technical knowledge required of officers in the Merchant Navy now requires that a youth who wishes to go to sea must have a good background of general education. The days when a boy used to run away to sea are now over, for entry is strictly regulated and the entrant must be qualified in all respects. Professional examinations conducted by the Government must be passed before each promotion to the higher ranks.

INDIAN SHIPPING

Indian shipping cannot aspire to reach the heights reached by British shipping, at least not for many, many years to come. It must however aim at achieving self-sufficiency in the shortest possible time; not only because its present state affects the security of the country, but because it would be in the economic interests of the country to do so. The first Five Year Plan aims at increasing Indian shipping tonnage from 400,000 to 600,000 gross registered tons over the plan period. This provision for shipping in the 5 year plan while recognising the importance that the Government attach to this aspect of national development, is indeed a very modest target when consideration is given to the ultimate needs of the country. At a rough guess the Indian shipping tonnage will have to be expanded to at least the 2 million ton mark to ensure a satisfactory share for it in the overseas trade of the country.

With all the backing of the Government there are many serious

difficulties in the way of progress for Indian shipping. By that it is not intended to give the impression that it is all 'smooth sailing' for the shipping of other countries. All have their own problems but where Indian shipping is at a disadvantage is in its comparatively recent growth. In this highly competitive business, the small Indian shipping companies are at every turn coming up against the long established and well entrenched foreign shipping interests, who at times make no secret of their hostile attitude.

The problem of replacing obsolete tonnage is another stumbling block in the way of development. Many of the Indian ships are old and uneconomical to maintain and these have to be replaced by new construction before thought can be given to adding fresh tonnage. The cost of post-war ships is some 3 to 4 times the pre-war figures, and Indian shipping has not only to meet the very stiff competition from abroad, but set aside sufficient capital to meet the inflated charges for replacement.

Trying to delve into the future of the shipping industry one comes up face to face with the claims which some air enthusiasts are frequently putting forward. They are inclined to foresee the day when the ship is replaced by the aircraft. Admittedly aircraft will take over an increasing share of the carriage traffic but there will always be a requirement for the more economical, if slow, mode of surface transport. In the majority of cases in the freight business, the consigner and the consignee are more interested in the freight charges and the regularity of sailings than in the speed of delivery. Admiral Nimitz in his report of the Pacific campaign of World War II, says that 10,000 tons of cargo which 44 ships can transport from San Francisco to Australia every month, would require 10,000 four engined aeroplanes manned by 120,000 highly trained personnel, and about 89 tankers to provide fuel for the aircraft at the far end of the run. In spite of all the progress that we can visualise in aeronautical engineering, it is difficult to believe that air transportation can be made cheaper than sea transportation for bulk freight; and who knows that with the introduction of nuclear propulsion at sea, the cargo ship of the future is not going to be faster and cheaper?

STRINGER LAWRENCE

BRIGADIER H. BULLOCK, C.I.E., O.B.E., F.R. HIST. S.

X. THE DEFENCE OF MADRAS (1758-1759)

ON 28th April, 1758, eleven French ships from Europe reached Pondicherry carrying a large body of troops under Count Lally, the new Governor-General. General Thomas Arthur Lally, Comte Lally de Tollendal, came of an Irish family from Tullanadaly (=Tollendal) near Tuam in County Galway. His father had followed James II into exile as a member of the Régiment de Dillon, and young Thomas first saw active service at Barcelona at the age of twelve. At Fontenoy and again at Lauffelt he greatly distinguished himself, and in 1756 he was summoned to Paris and given chief command of the expeditionary army which was to establish French dominion in the East Indies. On his arrival in Asia he fought on two fronts; the first, against the corruption and malpractices which were rife among the French Company's officials, and, secondly, against the British-Indian forces. "A brave, chivalrous man of high honour and sterling honesty, he was rash, impulsive and domineering."¹

The British naval squadron was now back from Bengal, though deprived of its commander Admiral Charles Watson who had fallen ill and died there. George Pocock, his successor, engaged the French fleet within twenty-four hours of its arrival, on 29th April, but the action was indecisive. That same day Lally attacked Cuddalore town and factory, which surrendered on 4th May.² Its garrison was permitted to withdraw to Fort St. David, where the troops were under command of a French-Swiss Major, Paul Philippe Polier de Bottens³; and the Madras Council adjured Wynch, the Deputy Governor, to hold out staunchly, promising him support from the ships.

But Pocock's men-of-war were unable to beat to the southward and fulfil the promise. Lally laid siege to St. David's with no less than 3,500 Europeans, behind batteries of siege guns at short range. The defence was sadly mismanaged. The beleaguered garrison dissipated their energies and wasted their ammunition in the defence of subsidiary outposts, and the

morale of the troops rapidly declined. On 1st June, though the defences were still unbreached, a council of war summoned at Polier's request decided to throw in the sponge. A convention was signed on the following day whereby the civil servants and soldiers submitted to become prisoners of war, to be exchanged at the first opportunity. Lally blew up the fortifications, which have lain in ruins from that day to this. Later a court of inquiry held that though Polier's courage was not at fault, his judgment was, and that Fort St. David should have held out much longer.⁴

Round One showed that in the thrusting Irishman with his whirlwind tactics the British had an adversary of high mettle, and experience taught that when Round One was fought at St. David, Round Two was likely to come off at Fort St. George, and *vice versa*.

Early in August the British and French fleets met in another inconclusive action, and a month later both squadrons left the Coast on the approach of the monsoon, the French for Mauritius and the British for Bombay. Now, in September, a reinforcement compensated the British for the deprivation of the 39th Foot, for Lieutenant-Colonel William Draper arrived at Fort St. George from England with part (about 200) of the King's regiment which he had recently raised, the 79th Foot.⁵

We now come to the siege of Madras. It has been described at great length in books which are easily accessible. Colonel Love, in *Vestiges of Old Madras*, devotes four chapters to the events leading up to it, the siege itself, and the aftermath, basing his account on the detailed day-by-day official record which was subsequently printed in full by the Government of Madras in 1915 (Records of Fort St. George, Sundry Book, Public Department, 1758-59). The journal of John Call, the chief engineer, was published in 1761 in Cambridge's *Account of the War in India*. Orme, a participant in the defence, of course describes the siege in great detail, and particulars are also to be found in many histories of Madras and the Madras army. In these circumstances there is no point in giving here more than a brief summary of Lally's unsuccessful attempt to wipe out British authority in Coromandel.

The siege began on 12th December, 1758, and was raised on 17th February, 1759. Of its 67 days, vigorous enemy bombardments occurred on 46. Lally's investing forces were estimated at 3,000 Europeans and 3,000 sepoys, with 500 sowars, against whom Lawrence had 1,758 Europeans and 2,220 sepoys inside the town and fort. Inland, Captain

Achilles Preston commanded a detached body at Chingleput, Major John Caillaud another at Tanjore, Captain Joseph Smith a third at Trichinopoly, and Lieut.-Col. Francis Forde a fourth column near Condore. All these outlying detachments could do something to ease the pressure on Madras by harassing enemy communications; and first Preston and then Caillaud who joined him at St. Thomas's Mount were eventually able to come to closer grips with the besiegers.

Technically, and to some extent actually, the credit for successful leadership of the defenders must go to Governor Pigot rather than to Lawrence, for according to custom the defence of Fort St. George was entrusted to the Governor by the unanimous vote of the Council, with the recommendation that he should consult Lawrence on all occasions, and "on extraordinary emergencies assemble a council of the senior officers of the garrison."⁶ Lawrence naturally took no active share in the sorties or in manning the defences. There are no anecdotes to relate of his gallantry: unlike Pigot, he was fortunate enough to avoid being harmed by the enemy's fire. His part was that of an adviser, and nothing but the success of the defence remains to show that his advice was sound. Orme tells us that the senior officers of the army looked on Stringer Lawrence as their "preceptor" in the siege, and there can be no doubt that the sight of his John-Bullish figure did much to maintain morale.

Lally had already decided to abandon his attack when on the evening of 16th February six British vessels anchored in the roadstead, and proved to be one of the Royal Navy, a Company's frigate, and four other ships, bringing six more companies of the 79th Foot from England. During the night the French withdrew from their positions, abandoning 52 cannon, and the siege of Madras was at an end. The defenders' casualties in dead and wounded were 29 British officers, 479 British soldiers, and 322 Indian officers and sepoys, while the French killed and wounded were estimated at 1,500.⁷ The British losses were more than made good by the reinforcements which arrived in the ships.

* * * * *

Just before Madras was invested, at the beginning of December, 1758, the Council had decided to form the independent sepoys companies into four battalions, with a British subaltern in each and a captain at the head of the whole; but the French advance frustrated this programme. But during the siege the first two "Seapoy Battalions", the prototypes of

the Indian infantry battalions of the British-Indian army, came into being. The weekly strength returns of the Fort St. George garrison show the two new battalions throughout the siege. They were placed under the command of a "careful European officer", Lieutenant Charles Todd, who was promoted captain-lieutenant on 20th January, during the siege, and was wounded by an enemy shell on 13th February. One of these battalions became the 1st Regiment of Madras Native Infantry and existed until February 1933, when it was regrettably disbanded as the 1st Battalion (King George's Own) of the Corps of Madras Pioneers. The life of the other ended in 1785. They did good service in the defence of Madras, sustaining heavy casualties (105 killed and 217 wounded), though their equipment and training were as yet rudimentary.⁸

The experiment was adjudged a success, for early in 1759 Lawrence, in Select Committee with two senior civil servants, drew up a scheme for forming the sepoys into regular battalions. There were to be seven of them—two each at Madras, Trichinopoly, and Conjeveram, and one at Chingleput. To each battalion were allotted two British subalterns, two sergeant-majors, and an Indian Commandant, and three inspecting captains were appointed to superintend the whole body. In each of the 9 companies (which included one grenadier company) were a subadar and a jemadar with a quota of non-commissioned officers. This scheme received official sanction in September, 1759, and thus came into force after Lawrence had left for England.⁹

Lawrence was quick to follow up the French retreat. Within a week he had marshalled his army in camp on the plain outside the city, and the Council reported to London that in a few days everything would be ready to take the field.¹⁰ He had at his disposal in Madras about 1,900 Europeans (including 90 topasses and 60 coffrees serving in the ranks of the European battalions), of whom 1,500 were fit for field service, with about 1,800 sepoys.¹¹ Transport and supplies were collected with some difficulty, for the recent operations had left the countryside almost bare. By 6th March, when the force moved off, two more companies of the 79th Foot had arrived from England via Bengal. The army's strength was 1,156 Europeans, 1,570 sepoys, and about 2,700 irregular or allied horse and foot, with 10 field-guns.

When Lally learnt of Lawrence's advance he retreated from Arcot to Conjeveram, where he fell sick and handed over command with instructions

to his successor not to risk a general action but to await the British attack. On 18th March Lawrence's force was within seven miles of Conjeveram, having encountered only slight opposition. Then he received dispatches from Lieut.-Colonel Francis Forde who was laying siege to Masulipatam, taking a dismal view of his chances of success unless he could have more men and more money. An appreciation of the situation indicated that the resources of the Presidency were unequal to the expense of keeping their army in the field, while the likelihood of a decisive defeat of the French in a general engagement was negligible. The Council therefore planned to send 200 men to Forde and withdraw the rest of Lawrence's field army into cantonments. But Lawrence, though sharing the Council's view as to the imprudence of an assault on the strong French positions at Conjeveram, "was equally persuaded of the evil consequences of retreating before them, and came to Madras on 26th March to dissuade the Council either from diminishing their force or from withdrawing it into garrison; and his arguments prevailed", as Orme relates.¹²

His point gained, Stringer Lawrence tendered his resignation and announced his intention of returning to Europe, for he felt that his health had completely broken down. Draper, who was offered the chief command in his place, also declined on the score of ill-health—"the heat of [this country] is grown insupportable to me, this is really my disease". So Major Brereton, second-in-command of the 79th Foot, succeeded as C.-in-C. of the King's forces, with Caillaud¹³ as separate commander of the Company's troops on the Coast.

Lawrence's resignation had effect from 9th April, 1759, but he was at Madras—probably residing in his "Garden House" at St. Thomas's Mount—awaiting a passage for a considerable period, until he sailed in the *Warren* on 20th August. His feelings at having to leave the East Indies for the third, and he believed the last, time are apparent from his valedictory letter to the Council in June, after they had accepted his resignation:—

"If ever I cou'd think any pains, any trouble, too much for the good of the Service in which I was engaged, the approbation you are pleased to bestow on my past endeavours now more than rewards me. I cannot indeed sufficiently express my Satisfaction on the occasion: I can only assure you Gentlemen, it is equal to my Zeal, and to the tender regard I ever had to the welfare and prosperity of a Society to whom the Nation owe so considerable a share of their honor and riches....."

It is needless, from your Generosity and Justice, to recommend the Troops to your Favor and Protection. Yet I cou'd not leave them without this last Testimonial of my Affection for them, and the grateful remembrance I have of their valuable Services. On this account I mention them; and as to them I owe that Honor and Success which hath merited your thanks, in justice I cannot but acknowledge it, and recommend the Authors of it once more for what they deserve from past Services, and what I hope they will still continue to merit from their future Behaviour.

Accept of my grateful Thanks for your Generosity in continuing my Appointments. Tho' they are advantages by no means to be despised, yet permit me to assure you my greatest pleasure in receiving them arises from considering them as marks of your Goodwill and Kindness.

It is needless to make an Offer of what you may command. The last Efforts of my Head and Heart are at your Service, as my last prayers and Wishes will be for your Happiness."¹⁴ We conclude by quoting also from the Council's dispatch which went with Lawrence to London in the *Warren* :—

"Colonel Lawrence, finding himself at times too much oppressed by the infirmities of age to serve you with the same activity he has always before exerted, takes his passage for Europe on this ship, the *Warren*. All we can say in his favor cannot express what we feel, nor add to the high and just sense you already have of his zeal and attachment to the Company's Interest. His character cannot be better drawn than in the letter which he did us the honor to write us the 25th June as a last testimony of his regard for your service; and we can venture, of our own experience, to vouch for the sincerity and truth of the sentiments he has there as politely as strongly expressed."

NOTES AND REFERENCES

- (1) *The Irish Sword* (journal of the Military History Society of Ireland), vol. iii (1951-52), p. 197.
- (2) Love, *Vestiges of Old Madras*, ii. 481.
- (3) Polier died not long afterwards of wounds received during the siege of Madras.
- (4) Love, *op.cit.*, ii. 482.
- (5) *Ibid.*, ii. 512, 540. For William Draper (1721-1787) see *Dictionary of National Biography*. He captured Manila in 1762 using Madras

as his base (see Chapter XI below) and became a lieutenant-general and Knight of the Bath.

- (6) Orme, (1803 edition), ii. 388.
 - (7) Sundry Book, 17 Feb. 1759.
 - (8) Wilson, *History of the Madras Army*, vols. i and iv, *passim*; Sundry Book, appendixes 43 and 317, and *passim*.
 - (9) Love, *op.cit.*, ii. 560-1, where other details, e.g. uniform, are given.
 - (10) Love, *op.cit.*, ii. 560.
 - (11) Orme, *op.cit.*, ii. 46; Sundry Book, appendix 320
 - (12) Orme, *op.cit.*, ii. 462-3.
 - (13) John Caillaud (1724-1812) joined the 8th King's Regt. (then Onslow's) in 1743 and fought at Fontenoy and Culloden. Entering the Madras army as a brevet-captain in 1753, he was transferred to command the Bengal army with the rank of lieutenant-colonel at the beginning of 1760. He officiated as C-in-C., Madras in 1761 and obtained that appointment permanently in 1766 when Lawrence left, but resigned in January 1767 and went to England. In 1773 he was given the degree of D.C.L. (Oxon.) Granted a special pension of £500 a year by the East India Company in 1775, he died at Aston Rowant, Oxfordshire, in 1812, aged 88. Born in Dublin, he came of Huguenot stock.
 - (14) Writers give varying dates for Lawrence's departure from Madras, but 20 Aug. 1759 is correct, *vide* Love, ii. 163; Madras Public Diary and Consultations, 1759, 20 Aug.; and Madras Council's letter to Bombay, no. 55 of 20 Sept. 1759.
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TANK VERSUS TANK BATTLE

MAJOR V.P. NAIR

THE war and its aftermath have given rise to quite a few tactical concepts on the employment of armour. Many of these ideas were originated to meet particular battle conditions and were not evolved by a process of logical reasoning for determining the place of armour in battle. As some of them, though false prophets and not honest coin, pass for currency, they need "debunking". Some time ago an article entitled "Close Support" published in one of our Service Journals debunked, though indirectly, the fetish of Infantry/Tank co-operation. Another such idea is the concept of "Tank versus Tank Battle" and its implications.

DANGERS OF FALSE CURRENCY

The danger of such concepts gaining currency in a country like ours is all the more serious because of our limited war potential, and technological and industrial backwardness. Sometimes one hears people blithely repeating these concepts during discussions and exercises without the foggiest idea as to their applicability under Indian conditions. The reason is not far to seek. During the courses both at home and abroad our studies are largely based upon British establishments and equipment, which though bearing a strong resemblance to our own due to past associations, are becoming increasingly different because of Britain's very much advanced technological and industrial resources. Study of American establishments and equipment further tends to complicate matters. Unless one has a very analytical mind and a sense of realism, one is apt to be led away into a land of make-believe where theoretical battles are fought on sand models with imaginary equipment. In the event of a war, unless we are partnered by an industrially advanced power, which can only happen in a global conflict, our limited resources would be subjected to an abnormal strain with very little or no replacements coming in from outside. Therefore, the organisation and training of our armed forces should be such that they not only bear this strain but also make their maximum effective contribution towards victory. As armour happens to be a very important component, whose influence can be decisive in battle, and as our resources in armour

are limited, it is necessary that we should examine very carefully the implications of armoured tactical concepts so that we are ready for war with our sights clear and guns steady.

ORIGIN OF THE CONCEPT

After the phenomenal success of German armour in France the Allied High Command became pre-occupied with the task of stopping the German armoured onslaught because that was the urgent problem. Both in Russia and in the North African theatre all energies were directed to achieve this end. Consistent with this policy armour was thrown into battle primarily to defeat German armour. It was laid down in the North African Command that the primary task of armour was to defeat and destroy enemy armour. The result was a total failure in both the theatres. What eventually stopped German tanks was not allied armour or anti-tank guns. In Russia it was faulty German Planning, lack of reinforcements, and the bogging down in the "Russian Mud" of the supporting arms and the supply echelons. In North Africa it was again lack of reinforcements and supplies due to faulty planning by the German High Command. This was again due to the failure to realise the strategic importance of the North African Theatre by the German High Command, who regarded it as a "side show" to help and buttress Italian morale. As Field-Marshal Rommel has pointed out, "There was no understanding in the Fuehrer's HQ of the art of creating strategic centres of gravity at the decisive point".

In North Africa, the British failure was due to lack of appreciation at higher levels of command of the mobile nature of operations, lack of training at lower levels in the tactical handling of armour and anti-tank artillery as a tank-destroying team, and in the initial stages only, the lower punching power of the low calibre tank guns. Rommel never launched his armour to seek out British armour and destroy it. His aim was always deep penetration for disrupting the enemy communications, headquarters and supply echelons. He always conserved his armour to deal the final blow. If he could avoid meeting allied armour and still achieve his aim he did so. But whenever he was forced into a tank versus tank battle he used tanks primarily for manoeuvre and led the British tanks into tank killing areas, which were sometimes previously planned but quite often improvised during battle. Here the powerful 88 mm guns knocked out the British tanks. The knocking out of enemy tanks by his own tanks was purely incidental to the overall plan. Rommel always maintained that

"as armour is the core of the motorised army and everything turns on it, the war of attrition against enemy armour must be waged as far as possible by the tank destruction units". In addition to this basic concept Rommel was compelled to conserve his armour because he also knew that, with his vulnerable communications across the Mediterranean and the long trek along the North African coast, he could not obtain quick replacements, not to speak of reinforcements, to his Afrika Korps.

FALLACY OF THE CONCEPT

Somehow the dead hand of the past appears to be preventing us from developing a modern, realistic concept of war based upon the real capabilities of armour, our existing and possible resources, and, consistent with our national policy, the type of enemy and terrain in which we will have to fight. We still hear people talking about armour defeating armour in a tank versus tank battle and "providing mobility and freedom of action to the main force", which in effect means "using a mobile force to give mobility and freedom of action to an immobile force, a proposition *prima facie* illogical". If we follow this policy we will be committing the same mistakes as the British and the Russians committed, with perhaps more disastrous consequences, because we will not have at our disposal the inexhaustible allied arsenal to steam-roller into success. If we lose, as we certainly will, the bulk of our armour in a tank versus tank battle, then we will also lose our power of manoeuvre on the battlefield. This is irrespective of the results of such an action, in which we hope to defeat and cripple enemy armour, which is itself problematical. Criticising this concept someone has pointed out that "to throw away such a potent piece as a tank force in fighting the enemy tank force is as foolish as for a chess player to begin by swapping queens."

Another contributing factor to this fallacy is the post-war development of anti-tank tactics and equipment, particularly in America. The anti-tank weapons have gone through a full development cycle and now it has been accepted universally that the anti-tank gun must possess good cross country mobility and armour protection. Some have pointed out that it must be a tank and have advocated that it must have more armour and a bigger gun. The development of the heavy gun-tank in the United Kingdom is based on this line of thought. They have equipped their infantry divisions with heavy gun tank regiments, as tank killers, in the place of the old Divisional Regiment Royal Armoured Corps equipped with light tanks. This has also led to the elimination of the anti-tank artillery regiment

from the organisation of the division. They have also included a troop of these heavy gun tanks in each of the sabre squadrons of their armoured regiments. According to the information available the reason for this inclusion is to ensure that the Armoured division during its mobile operations is not out-gunned when suddenly confronted with the Josef Stalin tank in the depth of Russian defences. One cannot help feeling that this is a legacy of the past, the Allied respect for the German 83 mm gun and the Panzer Jaegers projected into the Russian theatre in a future war.

The advisability of including heavy gun tanks in the armoured regiments is questionable because, due to their smaller radius of action, greater weight and slower speed, they will definitely cramp the style of medium armour in its mobile role. The idea appears to be as impracticable as if someone, during the pre-gunpowder era, had suggested the inclusion of elephants as an integral part of cavalry merely because of the apprehension of meeting elephants in the enemy defences! The point at issue, however, is that the role of armour and the role of tank destroyers should not be confused. Whether the tank destroyer is another tank, assault gun, SP anti-tank gun or any other weapon, it should be integrated into a tank destroyer team with infantry and normal armour, and the latter should not be treated as the primary anti-tank weapon. In India we have not got heavy gun tanks, and even if we had them their use may be restricted, because of the state of our roads and bridges. Therefore, the organisation of tank destroyer teams from our existing resources and their training for war assumes added importance.

THE BATTLE

From the foregoing it is clear that tank destruction in a deliberately sought out tank versus tank battle is an expensive business particularly for a country which does not manufacture tanks in large numbers. But there are occasions, when it is forced upon us and our tanks should be ready to meet the challenge, while bearing in mind that, essentially, the crippling or destruction of the enemy tank force is achieved by leading the enemy tanks into the jaws of our tank-destroying teams. I have used the expression "tank-destroying teams" advisedly, because, considering our present resources, destruction of enemy tanks could only be achieved economically by the integrated effort of all arms. Before proceeding to discuss the operational aspect of the problem it is necessary to take stock of

our resources for the task. Anti-tank effort at the present moment consists of anti-tank guns of the Artillery, tanks from the armoured corps whenever they can be made available, field and anti-aircraft guns when used in the anti-tank role, the close range anti-tank weapons of the infantry, and lastly the Air Force when in direct support of the A my. Another very important complement is the Engineer effort in the laying of minefields and the construction of other anti-tank obstacles. Out of these resources, the 6 pdr anti-tank gun is obviously very much out of date on account of its limited range and punching power. For the purposes of this discussion it is assumed that the infantry divisions will be equipped with a more powerful gun adequate for meeting the modern tank on level terms in a slugging match.

I shall now proceed to discuss the Battle under the various operations of war with particular reference to the role of the tank in tank destruction.

DEFENCE

The conduct of defence as a preliminary to the launching of offensive operations must itself be offensive and its aim should be primarily the destruction of enemy armour. In order to do this successfully the defence must be organised into a system of strong points in depth. These strong points should consist of nothing less than brigade sectors organised in such a way that they are capable of fighting independently even when surrounded. It would be preferable to organise battalion localities as strong points but this is at present not practicable unless the infantry battalion is organically equipped with anti-tank guns or assault guns in addition to its close range anti-tank weapons.

These strong points will have three tasks in the defensive battle. First, they stop the initial attack by the enemy who will naturally support his infantry with tanks and artillery and, quite possibly, air. Secondly, they separate the initial attacking troops from the forces following the initial attack and these are necessarily enemy armoured forces. The disposition of our strong points should be such that they effect this separation and dictate the direction of attack for enemy armour and at the same time form the bases or pivots for manœuvring our own counter-attacking force. While doing so they achieve the third important task which is incidental to the other two. This is their individual contribution to tank destruction and the placing of our counter-attack force at a moral and

material superiority over the enemy in the final act of the drama which is the destruction of enemy armour. They do the latter by blunting and disorganising enemy armoured thrust and making the enemy tanks fight and expend their ammunition so that they are at a definite disadvantage when meeting our armour. This reduction in tank fire power largely neutralises the inevitable numerical tank superiority of the attacking forces. This is offensive defence.

It will be seen from the above that our tanks meet enemy tanks only at the very end, after enemy armour or what is left of it has overcome or by-passed our strong points and passed through our tank killing areas on to our vital ground. The organisation and planning of our counter-attack should aim at getting this enemy force at a disadvantage from the flanks and delivering the final blow.

ATTACK

In the attack battle the problem of facing enemy tanks arises on two occasions. Initially we meet enemy tanks when he counters our penetration into his defences or when he counter-attacks to eject us from ground vital to him. The destruction of his tanks and his defeat depends on the quickness and efficiency of our re-organisation. The battle in this instance should be based primarily on our anti-tank weapons. When tanks are available they should be used primarily to cover the dangerous gap between the arrival of the infantry on the objective and the siting of the anti-tank guns, according to the accepted drill. The points to remember here are reconnaissance without delay of suitable fire positions including alternative fire positions, the drill for replenishment of ammunition, and good fire-discipline.

The second occasion when we can expect to meet enemy tanks is during the break-out and pursuit phases of the attack, when the enemy would be compelled to cover his withdrawal with armour. As he would naturally be anxious to save as much of his armour as he could, he cannot afford to be bold and undertake risky operations involving heavy casualties to his armour. A withdrawing enemy would naturally fight with his armour from prepared fire positions to delay our advance. Under these circumstances we should take advantage of the enemy's sensitiveness to our outflanking moves and the cutting of his routes of withdrawal. We should not normally rush his positions by frontal assault as that would result in casualties to our own armour and we should avoid this as much as possible.

But the important point to remember here is that there is never any point in attempting an outflanking move round the enemy force unless it is engaged and tied down frontally. This is because the enemy force being mobile can always hold up the outflanking columns and slip out of the trap.

The frontal engagement can be carried out by our infantry and artillery assisted, if necessary, by our armour. The outflanking armoured force must be accompanied by SP anti-tank guns, so that on reaching a suitable position astride the route of withdrawal, the latter can be deployed under the cover of our armour. This is invaluable because the SP anti-tank guns will then act as a secure fire-base and a pivot of manoeuvre for the tanks in addition to their task of tank-killing. It may be mentioned here as a point of interest, how much more effectively this task can be accomplished if we can have assault guns instead of SP anti-tank guns. The motorised infantry should fetch up as early as possible and deploy in this fire-base. This is the best method of cutting off enemy armour and destroying it, consistent with the security of our own armour. It is needless to stress that boldness, speed, and initiative on the part of the armoured commanders is the basis of success.

WITHDRAWAL

The problems of withdrawal have already been partly considered above under "Attack", from the enemy's point of view. As the aim of the covering forces in a withdrawal is to delay the enemy while our own defences are being organised, the task of inflicting casualties on enemy armour becomes incidental and of secondary importance. This cannot ever be attempted from covering positions or minor delaying positions. But, consistent with the main task, every opportunity should be taken to organise tank traps with our armour and anti-tank guns. This can be done best at the intermediate positions by covering the likely tank approaches, particularly on the flanks. No other position, except the main defences, can provide the necessary security for the operation of tank destroyer teams. The organisation of these tank traps requires adequate reconnaissance and careful planning and a very fine judgement on the part of the commander as to when he should break off action and withdraw the troops forming the tank traps. Otherwise, the whole withdrawal operation may be jeopardised by the loss of valuable equipment. Careful reconnaissance of fire positions and covered routes of withdrawal, arrangements for early warning of tank approaches, adequate fire support and

efficient intercommunications are essential for the successful organisation of these tank traps.

ADVANCE

When armour is leading the advance in force and not merely as the spear-head of an infantry formation, the operation is definitely different and something bigger and wider than the orthodox advance taught in our instructional establishments as one of the operations of war. What I have in mind is the entire battle based on a moving pattern in which the armoured force advances through a succession of objectives and drives deep into the enemy territory on to a strategical objective. Perhaps with our present armoured resources such an operation may not be undertaken, though I do not rule out its possibility. We may, therefore, be confined to limited advances as part of the over-all plan. Even so, there will be numerous occasions when we meet enemy armour ranging from light reconnaissance troops to heavier armour as we encounter stronger opposition. The tactics will be similar to that discussed under the break-out and pursuit phases of the attack but with one important difference. As we will not be advancing against a withdrawing enemy force defeated in battle, we cannot take similar risks. There is need for greater security, which means that our armour should advance from firm base to firm base. These firm bases are actually fire bases organised by the accompanying artillery and infantry support elements, which are necessarily motorised. In addition to providing security for the operation of our armour these are necessary for bringing up the supply echelons. Adequate air supply, air transportation, and tactical air support would tremendously increase the range and scope of these operations but the provision of so much air support depends on various factors, whose discussion is outside the scope of this paper. As far as the destruction of enemy tanks is concerned, the point to remember is that our armour should work in close cooperation with SP anti-tank or assault guns and tactical air. The tank-destroying team will continue to operate as described previously.

CONCLUSION

From the foregoing discussion it is clear that destruction of enemy tanks is a continuous process achieved by the combined effort of all arms. The contribution of tactical air, though not considered in detail, is nevertheless very important. The organisation of killing areas and "tank destroying teams", the planning and launching of counter-attacks, the

forming of firm bases, and the details of the tactical employment of armour and artillery at troop and squadron levels, though absorbingly interesting, could not be discussed in detail for want of space. It is once again emphasised that in order to conserve our armour the tank versus tank battle should never be deliberately sought. Whenever forced to join in one, our armour should be trained to fight it out, but only until such time as would be necessary for the deployment of our tank-destroying teams in favourable positions. Once the tank destroyers are ready our armour should break off the engagement in such a manner that by clever manœuvring the enemy tanks are led on to our tank destroyers for the final slugging match. These tactics require, on the part of the junior leaders and the crew commanders, considerable skill, dash and initiative which can only be obtained by vigorous and well directed training.

MALAYA—A GEOPOLITICAL STUDY

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MALAYA has been aptly called the Pivot of Asia. As the southern-most part of the Asian mainland it is the very heart of south-east Asia. Its strategic position is important for any operations by land, sea or air throughout the area. It is the key to the Indian Ocean and to the South China Sea and the Pacific Ocean beyond. A strong military power with bases in Malaya can, therefore, exert influence in Indonesia, Indo-China and Thailand in the east, and Burma and Ceylon in the west.

We in India should be interested in what is happening in Malaya. A Malaya, stable and in friendly hands is important to us. We cannot afford to forget that during World War II when the Japanese occupied Malaya, the Bay of Bengal was closed to our shipping and the whole eastern coastline, was laid open to hostile attacks.

The object of this article is to provide the reader with a background, historical, political and military, to help him to understand the situation in Malaya.

HISTORICAL BACKGROUND

Very little is known of the early history of Malaya, except that in the seventh and eighth centuries it formed part of the empire of Sri Vijaya and that from the first century onwards it was subjected to the influences of Indian culture. In the sixteenth century Hindu influence was broken and the Malays were converted to Islam.

In modern times the natural wealth of the peninsula has been a potent factor in the fashioning of Malayan history. At first it was spices, now it is tin and rubber. The lure of the spice trade brought the western maritime powers to the peninsula. The first to arrive were the Portuguese who in 1511 occupied Malacca and made it their principal trading centre in the Indies. In 1641 the Dutch occupied Malacca. The first British factory in the Peninsula was established in the state of Patani on the east coast in 1613, but the enterprise came to an untimely end in 1620 when

the Dutch turned the British out. Later the British purchased Penang from the Sultan of Kedah in 1786 and Singapore from Johore in 1819. The Straits Settlements—Singapore, Malacca and Penang—were ruled from India until 1867 when they were erected into a Crown Colony.

Early in the 1870's the British began to extend their control inland. As a result of this forward policy the Malaya states became protectorates.

During World War II the Japanese effected a landing in Kelantan on 8 December, 1941 and proceeded down both sides of the peninsula. By 31 January, 1942 they had completed the conquest of the peninsula and on 15 February, Singapore fell. With the defeat of Japan the British returned to Malaya.

THE POLITICAL LANDSCAPE

Up to 1941 the political structure of the country was based on a three-fold division:—

1. The Straits Settlements—a Crown Colony consisting of the islands of Singapore and Penang, the Province Wellesely on the mainland opposite to Penang and the town and territory of Malacca.

2. The Federated Malaya States—Perak, Selangor, Negri Sembilan and Pahang.

3. The unfederated States—Johore, Kelantan, Trengganu, Kedah and Perlis.

After the war the administration of the country was reorganised. Now there are only two units—the Colony of Singapore and the Malayan Federation. The Malayan Federation embraces all the native states together with the British possessions on the mainland. The seat of the federal administration is at Kuala Lumpur. The Governor of Singapore also acts as High Commissioner for the Federation.

THE NATURAL LANDSCAPE

A range of mountains forms the backbone and divides the peninsula into two unequal halves, the larger of which lies to the east and the smaller to the west. The descent from the top of the range into the plain is less abrupt on the west than in the east. The west coast is covered to a depth of many miles with mangrove swamps, while the east coast is for the most part free from mangroves but sand stretches for miles.

The principal rivers on the west are the Perak and the Muar. Both are fine rivers and are navigable by steam launches for many miles from their mouths. There are more than a dozen rivers in the eastern half. They are all guarded by difficult sand-bars at their mouths, but are useful as inland waterways.

The face of Malaya is covered by one vast forest intersected by countless streams and rivers.

Four-fifth of Malaya is jungle. The trees grow one hundred feet or more high. Their leaves and boughs are so thick that the rays of the sun rarely get through. Under them are thick stands of young trees and palms, lush vines hanging from branches and thorn bushes. There is no grass, no flowers. The whole thing is a dungeon filled with darkness and dampness. Visibility is never more than twenty-five yards, sometimes even less.

The jungle has ancient tracks known to few men. They are highways to the guerrillas who when pursued can cover a wide territory with ease. If the pursuit is close, he can step off the trails a few feet and be completely lost.

The rail and road communications are not much developed.

The main wealth of the country lies in tin and rubber.

THE HUMAN LANDSCAPE

Malaya is not very thickly populated. The population is about 60 lakhs. This is divided into three main segments, the Malays, the Chinese and Indians. The Chinese form about 45% of the population, equal to that of the native Malays. They are mostly immigrants or descendants of immigrants from the southern provinces of China. The Indians are nearly 10% of the total and originally came as indentured labourers on the rubber estates. Bankers and shop-keepers followed. They are now a prosperous community, a stable and peace-loving element of the population.

There are a few thousand Europeans and Americans, birds of passage, mostly estate managers and businessmen.

The heterogeneous nature of the Malayan population is a great weakness. Groups with different languages, religions, standards and prejudices make it difficult to develop a common feeling of nationality.

THE ORIGIN OF THE TROUBLE

The present troubles in Malaya began in June, 1948 when several thousand Communists, majority of whom were Chinese led by the former members of the Malayan People's Anti-Japanese Army, retreated into the jungle and started a reign of terror. The Communists considered themselves aggrieved and felt that they had not been fairly treated and rewarded by the British authorities for their services against the Japanese.

During the last six years the Communist Guerrillas have had considerable success in their campaign and they have certainly disturbed, if not disrupted, the economy of Malaya.

THE OPPOSING FORCES

The Guerrillas

There have never been more than 5,000 guerrillas in Malaya since the present troubles started. About 95% of them are Chinese and close to a third are women. Most of them are not Communists, but their leaders are.

The main effort of the guerrillas is directed towards disturbing law and order and thus creating difficulties for the authorities. They strictly avoid fighting troops in pitched battles. If troops approached their camps they moved away. When followed to their next camp they move away again. Their movements can be quick as they have little food and equipment to carry. Their modus operandi is:—

- (1) Attacking and killing planters and miners. They are very selective in this.
- (2) Laying ambushes for military and civilian transport for the purpose of killing and looting.
- (3) Slashing down rubber trees and damaging dredges with the purpose of reducing production of rubber and tin, which are the main source of dollars for the British.
- (4) Terrorising the countryside to obtain food.

The British Forces

To defeat the guerrillas and to put an end to their activities large forces have been assembled. There are at present in Malaya some 50,000 British troops (including British regulars, Gurkhas, Fiji islanders, and Borneo head-hunters) 20,000 regular police, 55,000 special police and about 250,000 Home Guards, and several squadrons of the R.A.F.

To meet the challenge the authorities have from time to time adopted different plans. Up to 1950 the British did not have much of a plan and the guerrillas had much the better of it. In that year Lt. General Sir Harold Briggs was appointed Director of Operations. The Brigg's Plan was directed at disrupting the terrorists' supplies by cutting their communications with the civil population whom they had been terrorising in search of food. Half a million Chinese "squatters" on the jungle fringes were resettled in new villages. Operations to sweep the jungle were started. Reinforcements of troops were poured into Malaya and the R.A.F. made several strikes to dislodge the terrorists from their jungle camps.

The guerrillas broke into smaller groups and caused many 'incidents' cutting telephone wires, slashing rubber trees and attacking stray persons. In October 1951 Sir Henry Gurney, the High Commissioner, was ambushed and killed. The general effect of the Brigg's Plan was to inflict more casualties on the terrorists but it did not put them down.

In February, 1952 General Sir Gerald Templar was appointed High Commissioner with overall control of both the civil administration and the armed forces. General Templar adopted more stringent measures with the result that more of the terrorists were killed and many of them surrendered. But at the present time it cannot be said that the trouble is over, although things are much better and are likely to improve further in the near future.

MILITARY MEASURES

The military measures taken against the guerrillas fall into three categories:—

1. Removal of Chinese and Malayan settlements from the forest fringes to new villages where they can be watched and no longer subjected to terrorist threats. The idea is to deny the terrorists food-supplies which they got from the squatters.
2. Isolating areas where the guerrillas are known to be and preventing them from breaking out.
3. Sending patrols into the jungle to kill or capture the guerrillas, destroy their camps and crops, forcing them to move on and periodically laying ambushes.

The operations in the Malayan jungle are both heart-breaking and back-breaking. Patrolling in the jungle tests the physical and mental

capacities of those partaking in it to the extreme. No wonder many breakdown from sheer nervous strain.

Here is what Justice Douglas of the U.S. Supreme Court says in his new book "North from Malaya."

"The hunt in the jungle is largely a matter of stalking. One waits like a tiger for the prey to move. The hunt is a cautious one, the movements stealthy, the pace slow, the nerves taut. The prey may be in range for hours and no contact made. The hunter may manoeuvre for days to get one shot. A whole platoon may be within call, yet never in sight. The song of a bird or the screech of an animal may be a signal on either side. The game of stalking goes on quietly and endlessly. One rifleshot, quickly muffled in the dense undergrowth, may be the product of one week's silent work. It is man against man—rifles cocked, ears straining, eyes alert, bodies tense, all the instincts of self-preservation operating."

No doubt the jungle is the guerrilla's best friend.

USE OF THE AIR FORCES

To supplement their military effort the authorities in Malaya have made use of the R.A.F. as well.

The various uses, to which the R.A.F. has been put, are:—

1. Offensive Support.
2. Air Supply.
3. Casualty Evacuation.
4. Visual and Photo Reconnaissance.
5. Airborne Assault.
6. A.O.P.

1. **Offensive Support**

Offensive support is called for and rendered to harass guerrilla groups in the jungle, thus keeping them constantly on the move. Sometimes air strikes of marked areas have been undertaken to drive the bandits into waiting ambushes laid on before.

2. **Air Supply**

Air Supply is the most useful role played by the R.A.F. in Malaya. All operations against the guerrillas are dependent on air supply. Without it such operations would have become difficult if not impossible. Troops.

moving through the jungle have to travel light. They cannot carry much of equipment and food with them. Air supply comes to their aid by periodic drops.

3. Casualty Evacuation

This necessary and very useful function is also performed by the R.A.F. Its usefulness can be seen from the fact that if it were not available many precious lives would be lost. The only alternative to air evacuation is usually a hard march of three or four days over jungle trails and no treatment for the wounded man. This has greatly eased the task of the fighting soldier and has raised his morale.

4. Reconnaissance

Visual recce in the jungle, which provides complete cover to the guerrillas, is not of much use. It is possible only if done by a slow moving aircraft like the Auster or a helicopter. Generally speaking movement on the ground cannot be seen by the naked eye.

On the other hand tactical photo recce has proved useful. It has provided a complete photo cover of the whole country and is also undertaken for special operations.

5. Airborne Assault

Paratroopers have been dropped in the jungle on many occasions. This practice has recently become more common.

Here also many difficulties are encountered ; one is the nature of the country, the other is the difficulty of navigation.

6. Air Observation Posts

The A.O.P. units have been useful in assisting ground troops. They carry out contact recce for ground patrols, telling them by wireless their location in the jungle and relaying their messages to Headquarters. They have also proved useful in pre-battle recce.

CONCLUSION

The trouble in Malaya is not the result of a national upsurge. The guerrillas are a nuisance not only to the authorities but to the people as a whole. Most of them are Chinese and are led by Chinese Communists. Their only friends are a small fringe of the Chinese population. The vast majority of the people, Malays, Indians and Chinese, are not only indifferent but definitely hostile towards them. This does not mean that

there is no nationalist feeling in Malaya. There is. The best thing for the British would be to win over these people and thus cut the ground from under the feet of the communists.

The British Government has made promises of self-government to Malaya and steps towards that goal have already been taken. Malaya should, in the very near future, be set up as a self-governing dominion. Only thus can the British hope to safeguard their commercial interests in Malaya. There is no alternative to this. The people of Asia are on the move and no power on earth can keep them down. A contented Malaya will be a friend of Britain, a source of dollars and of influence.

WHEN JUMBO WENT TO WAR

MAJOR A.M. MENON

ELEPHANTS are domestic animals today. Their employment by human beings is confined to commercial purposes and ornamental appearances at processions and festivals in temples, all of which are peaceful avocations. Elephants, however, had a martial role and have acquitted themselves creditably in helping mankind in their warfare amongst themselves.

IN ANCIENT TIMES

In ancient India, martial elephants played an important part. Although in peace time they were used for transport purposes, in combat they had an offensive role. There are many treatises on the art of warfare in ancient India, and one of them, the *Agni-purana*, gives an account of the offensive role in which elephants were then employed. It is said that "elephants marched in front of an advancing army clearing the way of trees and shrubs ; they protected the flanks of the army, helped the army to ford rivers, presented a firm fort in fight, broke down the enemy phalanx, routed the enemy's army, rallied the soldiers of own side, and safeguarded the treasure". Thus, it was a varied role, combining partly the tasks of the Engineers, of the Tanks, and of the Infantry of today.

The employment of elephants as a shock arm was one of the greatest innovations of the 3rd century B.C.

Alexander the Great faced war elephants for the first time at the battle of Gaugamela. He met them again at the battle of Jhelum, in 327 B.C. In this battle, it is said that he was afraid that his horses would not face the elephants of Porus ; and so he avoided a frontal attack, and eventually turned Porus's right flank by crossing the river.

Alexander apparently never employed elephants in war. But his successors used them extensively. In fact, Seleucus considered them so important that he ceded the eastern provinces of Alexander's empire to Chandragupta Maurya for a herd of 500 elephants ; and with those 500, he later won the decisive battle of Ipsus in 301 B.C.

Chandragupta Maurya was the first monarch to have a really well organised Army Headquarters in India. He had four armies, one of which was composed of 8,000 elephants, each mounting four fully armed warriors. There were five branches in his Army Headquarters, and one of them was entirely devoted to the care, maintenance, training and tactics of his elephant army.

Experienced troops soon overcome the terrors of the elephant in the offensive role, but in those days, frequently, when elephants were used for the first time on the battle-field, their moral effect was deadly. For instance, it is said that it was with a handful of elephants—sixteen to be accurate—that Antiochus the First checked the onslaught of the Gauls. The story goes that, at the end of this hard-fought battle, Antiochus remarked to those near him: "I am ashamed to think that we owe our safety to these 16 animals".

One of his successors, Antiochus the Third, met Ptolemy the Fourth at the battle of Raphia in 217 B.C. Antiochus had a force of Indian elephants, and Ptolemy's army had African elephants. The historian records that the Indian elephants outmatched the African elephants, and thereby gave Antiochus the Third a stupendous victory over Ptolemy the Fourth.

Sometimes, the elephant became a nuisance as well. The last instance of the employment of elephants on an offensive role was at the battle of Magnesia in 190 B.C., when Antiochus's elephants became unmanageable, and threw his army into utter confusion, and thereby led to his defeat. Very much the same happened to Hannibal also at the battle of Zama in 202 B.C.

In those days, when elephants were a shock arm, attempts were also made by armies to improve their anti-elephant tactics. Many types of instruments were invented to injure their feet. But the most extraordinary one was a device adopted by the Megareans. They raised a crowd of pigs. When Antigonus attacked the Megareans with his elephants, the Megareans smeared pitch on the pigs, set it alight, and then drove the pigs against Antigonus's elephants. When the elephants saw the flaming pigs rushing towards them, they took fright and fled. After this experience, Antigonus ordered his mahouts to keep a lot of swine among the elephants to accustom them to the presence of pigs. !

IN THE BURMA CAMPAIGN

The last world war was fought mostly by armies which had been mechanised almost completely. In 1940, any soldier would have laughed at the thought of recruiting elephants in the Army! But still, in Burma, in close country, where paucity of good roads was acute and existing roads were damaged by heavy monsoon, elephants helped both the Japanese and the Allies.

The Japanese used elephants to a great extent and with remarkable skill. Their big offensive towards India *via* Imphal, Ukhrul, Kohima and Jesami from the upper Chindwin depended largely on elephant transport. This accounted for their rapid movement over jungle paths in very difficult country.

On 13 March 1944, the Japanese crossed the Chindwin by night with a column of 350 elephants, which they marched direct to the Chin Hills. These animals were used over precipitous and very difficult country, linking up with motor transport and bullock carts when they reached roads once more. A Jap NCO was in charge of every 30 elephants. Although those elephant transport columns did not look smart, they functioned well and moved quite fast. From the air bomber's point of view, these columns were extremely difficult targets to find, as they mostly marched by night without lights and were concealed in the jungles by day. As the Fourteenth Army advanced towards Rangoon, they captured many elephants abandoned by the retreating Japanese. In all, 1652 elephants were captured by the Allied armies from the Japs between November 1942 and their final surrender.

The employment of elephants by the Fourteenth Army was quite an organised affair. A British officer, who had had a lot of experience in managing elephants in civil life, was appointed Elephant Adviser in the Army. His name was Lt.-Col. J. H. Williams and his work was greatly valuable to the XIV Army and so highly appreciated. He arranged to collect and maintain all available elephants and their keepers in the Burmese jungles, and organised them into camps, and directed their employment. He has written a book with the title of *Elephant Bill*, which gives an account of the employment of elephants by the Fourteenth Army.

The work of the XIV Army elephants consisted mostly of transportation of men and material, and building of roads and bridges. And in these, they did signal service to the Army.

In December 1942, a 200 ft. long bridge was required over the fast flowing Lokechao river near Tamu. There were not enough Sappers for the job. 25 elephants were then assigned to the job, and within 13 days, working from absolute scratch, the bridge was completed. The work included the selection and felling and logging of trees, their positioning on the water, and the necessary securing of each log to ensure the steadiness of the bridge—quite a job indeed. And the day it was completed, the entire transport column of 49 Bde of 17 Ind Div passed over the bridge.

17 Ind Div was in the Kabaw Valley in April 1943. When the monsoon broke, 49 Bde was caught in the valley at Witok, and in two days all its mechanical transport was very badly bogged. The elephants then came to the rescue. They pulled the entire Bde transport out of the mud—"like champagne corks out of bottles" (Col. William's words). They also laid causeways of logs in the mud in amazingly quick time, over which whole convoys of mechanical transport passed. Many Gorkha patrols even rode over them across the quagmire in the valley in a shuttle system.

Early in 1943, operational requirements necessitated the repairs of the road from Tamu to Kalembo. It was decided that all the bridges on the road should have log-timber abutments. The elephants were put to the task. They worked twice their normal hours. They delivered over 2,300 tons of timber at the road in a period of three months, kept well ahead of the Sappers, and had sufficient quantities of logs stocked in readiness at every bridge.

The Japs had looted all the rice in the villages to the north and down the Chindwin, as their armies were without supplies, owing to their failure to capture the Allied dumps in Imphal, and the villagers were starving. The elephants again came to the rescue, and transported food to the starving villagers.

After the monsoon, reinforcements arrived, and roads were needed over every track to the Chindwin; roads had to be rebuilt north of Myothit and east of Sittaung. Every fit elephant worked full time. Parties of elephants were attached to Sapper companies, one officer being responsible for rationing the men who looked after and controlled the elephants and for general supervision. By December 1943, there were four roads fit for transport to the Chindwin River. No bridging programme had been possible for these roads, owing to other Engineer commitments. No less

than 270 log bridges and log culverts were put in by the elephants on these routes, thus allowing all MT and Tanks to go forward before the main bridging programme was undertaken.

And then there arose a battle between the ASC and the Engineers, partly to decide which of them should have priority in the use of elephants, and partly to determine whether elephants were a branch of transport or of the Sappers. This gave rise to questions on the status of elephants, war establishments, war equipment tables and so on. It is not known whether all these problems were satisfactorily solved, but elephant companies were raised and were generally considered part of the Engineers. By September 1944, the Sappers in the XIV Army had completely accepted elephants as part of their necessary equipment. The care and management of these elephants needed quite a lot of attention and hard work. Col. Williams then had to issue some general notes on elephant management.

One of the most spectacular jobs that the elephant companies did was for XXXIII Corps, namely the building of a bridge over the Nayanayah River for a squadron of Tanks engaged in the offensive on Kalembo. The bridge was completed in one day, and elephants worked from 7 in the morning to 7 in the evening. They worked under gunfire. During the whole day, Dakotas droned 200 to 300 ft. overhead, dropping supplies on a nearby dropping zone, three furlongs away from the site of the bridge. The elephants had become so used to the noise of gunfire and the aircraft, that they took no notice whatever of either.

The elephant companies were put to many other tasks as well. Some of General Wingate's columns used them to get over difficult terrain. During air drops, they were used to carry the supplies from the dropping zones to the distributing centres.

They extracted timber for the manufacture of 500 assault boats at Kalewa. They cleared forests and made runways for aircraft. They often worked quietly alongside bulldozers and other noisy plant. They also transported, on a few occasions, some Bofors AA guns. A section of 8 elephants carried one gun, the spare barrel, the reserve ammunition and all the kit of the gun detachment. They were quite unperturbed and unafraid at a distance of 75 yards from where the guns fired.

Some amusing requests were received for elephants to ram loose earth with their big feet on air strips ; to crank up stalled lorries with their trunks

when the drivers were not equal to the job ; and to spray tar with their trunks on road surfaces !

While experiments were going on in this organisation of the elephant team for the carriage of AA guns, Col. Williams once signalled to the Commander Royal Artillery concerned that he was supplying a certain AA Regt with " eight, good, weight-carrying females for experiment ". This signal was interpreted in more than one way. Many gunners of varying ranks were greatly disappointed when 8 female *elephants* turned up for the experiment !

After the crossing of the Chindwin at Kalewa, many new forest areas kept falling into the hands of the XIV Army. Many elephants were found in these areas ; and they were considered so valuable that Brigades that captured them tried their best to keep them as part of their own transport. It is said that the demand for elephants was so great that Col. Williams once traded ten elephants in exchange for six jeeps !

At the time of the battle for Mandalay and after the capture of Prome and Toungoo districts, there were about 1050 elephants working for the XIV Army. After the surrender of the Japanese, many of these returned to their peace-time avocations with Burmese timber corporations. Some of them did not survive war wounds and injuries inflicted by careless and ruthless human beings. After the official end of the war, 417 elephants were still being employed for some time to pull out the tail of the XIV Army in the Kabaw Valley.

Col. William's book carries a preface by Field-Marshal Sir William Slim. " In the XIV Army, our soldiers varied in colour", says the Field-Marshal. " The animals we used reflected a similar variety. . . . There were true bonds of affection between the men and these beasts, but the elephant held a special place in our esteem. It was not a matter of size and strength. It was the elephant's dignity and intelligence that gained our real respect. To watch an elephant building a bridge, to see the skill with which they were coaxed into position, was to realise that the trained elephant was no mere transport animal, but indeed a skilled Sapper.

" They built hundreds of bridges for us ; they helped to build and launch more ships than Helen ever did for Greece. Without them our retreat from Burma would have been even more arduous, and our advance to its liberation slower and more difficult. We of the XIV Army were—and are—proud of our elephants".

THE MILLSTONE OF TRADITION

MAJOR J. NAZARETH

THE spirit of the Army lies in its tradition. Tradition consists of all the customs and ideas handed down from generation to generation. It is the reincarnation of the soul of past regiments in the regiments of today. This reincarnation ensures the continuity of the spirit of the regiment. By tradition our kinship is established with our worthy forbears and we claim their glorious achievements in battle as our own; we also accept the responsibility for passing on to units to come, the good name of the regiment not only untarnished, but more glorious than before. The pride of the regiment is in its tradition, and it is the strongest motive force in building up 'esprit de corps'.

Tradition belongs to the soul not to the intelligence. Philosophers may try to show the absurdity and irrationality of men being stirred to mighty deeds by the design of a dress, the magic of a name or the flutter of a flag, but as long as men have emotions these things will incite them to do the impossible because battles though planned by the intelligence are executed by the emotions. Therefore, it is foolish to decry the value of tradition and to scoff at the observation of customs which are apparently meaningless. Rather we must foster tradition where it helps to build up 'esprit de corps' and ensure the cohesion of the regiment. This simple truth can be easily forgotten when cold blooded methods of economy are applied, as we see in the United States an attempt to streamline the Army on the lines of business efficiency.

The Army is considered to be conservative because it is steeped in tradition. Soldiering excites all our emotional qualities like loyalty, courage, comradeship and sense of duty, and for this reason soldiers tend to rebel against innovations which intelligence suggests must be introduced but which conflict with traditional ideas.

Tradition itself is irrational as we have seen but when it tends to oppose intelligent thinking, and to limit the methods and means by which wars are waged, it is a sign of mental immaturity to follow tradition slavishly. Tradition is good for the rank and file of the Army but it becomes a mill-

stone on progress when senior commanders who are responsible for guiding the destinies of the Army are influenced by it. No soldier who cannot think clearly, uninfluenced by emotions is fit to be promoted to high command. Such a man in an exalted position can lead a nation to disaster. If those responsible for directing the training and organisation of the Army have not the mental flexibility to give up outmoded traditions and to keep pace with the fast changing conditions of war, the Army they influence soon falls out of date and tends to fight new wars with methods of previous wars.

War is resorted to by nations in the final instance to decide disputes. It is the highest court of appeal. There is no force of sanction higher than war. For this reason it is foolish to go to war if one's means of waging war are restricted by traditional ideas especially as there is no guarantee that the enemy will conform to these self-imposed restrictions. The first rule for waging war is expediency. Nations which have not subscribed to this idea have perished, and deservedly so. In this respect tradition has been the cause of the downfall of nations.

History repeats itself because it is a story of human folly and we see throughout history a recurrence of the blunder of blind adherence to tradition. Without doubt this blunder will recur in the future because there will always be men at the helm of affairs who are ruled by emotion.

In early history we see the Spartans engaging in wars ruled by the traditional emotion of valour. The intelligence of their leaders was completely exercised by this emotion which led them to fight with absurd self-imposed restrictions. Fortresses were not attacked because a brave man could be killed by a missile thrown by a woman or a child ; the cavalry was not developed because the Spartan youth wanted to display his valour in a hand to hand fight with the enemy ; and Sparta did not become a naval power because naval fighting gave limited opportunities for the display of valour. Sparta perished when Athens wrested the naval supremacy which she despised. The Romans chose an open fight to show the world the superior Roman courage and drill with arms. Surprise was considered an ignoble way of winning a battle, and Hannibal, the master of ruse, was dubbed ' perfidious ' because he resorted to strategem in his unequal struggle against Rome. For this folly Rome nearly paid the supreme penalty.

Religion tried to impose the sanction of divine wrath as a superior sanction to war. The Code of Manu says, " The King shall not slay his enemies in battle with deceitful or barbed or poisonous weapons nor

with any having a blade made hot by fire or tipped with burning materials." The idea was promoted in the medieval period that war tested the moral values of the case by success in battle. In the West, the Church chose to regulate warfare by banning certain weapons and restricting the condition of warfare. As long as both the contestants accepted this higher moral sanction, tradition was no handicap ; but many a commander was prepared to incur future divine wrath for the present victory over his enemy in battle.

The medieval knights with their traditional notions of chivalry refused to adopt the bow because missile fighting was as abhorrent to them as atomic warfare is to us today. The French knights thought that the arrow was a scoundrel's weapon because it did not know where it struck as the sword did. They were decimated, martyrs to tradition, at the Battle of Crecy in 1346. But tradition dies hard and the foolish French sacrifice to their emotional god was repeated a few years later at the battle of Poitiers.

The discovery of gunpowder was a forceful reminder to all concerned that war was the ultimate sanction in human affairs, and that in war the deciding factor was power however unscrupulously it was attained. But there were still emotional men who refused to accept this new weapon of horror because it revolted against all their traditional ideas of chivalry, and they sought to fight wars with self-imposed restrictions of prejudice against the use of fire-arms. Bayard "Chevalier sans peur et sans reproche" the representative of medieval chivalry although courteous to prisoners always shot arquebusiers whenever he captured them. By an irony of fate, the inexorable god of war brought home to Bayard the futility of stopping his progress, and Bayard was shot with an arquebuse at the Battle of Sesia.

On the seas the Spanish Admirals based their tactics on boarding the enemy ships and fighting hand to hand. They had a quixotic contempt for the use of the cannon and considered artillery an ignoble arm. Hence they built their ships like moving fortresses in order to grapple and board their opponents' vessels. The Armada was routed in 1588 by the small English ships which refused to close in with the enemy and oblige him by fighting according to the Spanish traditions. It was the cannon which reason advised but which tradition despised, that ended Spanish naval supremacy.

A repetition of the blunder of being hide-bound by tradition was nearly repeated by the British when the power of steam was discovered. In 1828 Lord Melville of the Admiralty wrote, "Their Lordships felt it their bounden duty to discourage, to the utmost of their ability, the employment

of steam vessels as they considered that the introduction of steam was calculated to strike a fatal blow at the naval supremacy of the Empire." The idea of giving up sailing ships was gall and wormwood to all sailors as it meant a complete break with naval tradition. Had the views of Lord Melville been accepted it would have been proved to that worthy Admiral that his loyalty to his sailing ships transcended his loyalty to England.

So chary were the sailors of losing their beloved sails that when Captain Cole designed the ill-fated "Captain", the first true iron-clad built for the Royal Navy, the Admiralty distrusting steam power, insisted on overloading her with masts and sails in addition, for which her design was quite unsuited. The ship capsized in a squall and her designer passed into obscurity for his pains.

The Boer War knocked the bottom out of most of the Army's traditional ideas of the time. The Boers were unsporting enough to use camouflage and concealment, lay ambushes for the enemy and employ guerilla tactics. They forced the British Army to change from their traditional red coats into drab khaki and to grovel in the mud and take cover instead of fighting upright in its colourful costume which was so much more dignified! And all this too after the Army had trained for years in drill and 'spit and polish'!

The invention of the tank was greeted with horror by traditional cavalymen. The disappearance of the horse from the battlefield, and the break in the tradition involved, was more than their flesh and blood could stand. To drive in a tank was too drab and prosaic for the dashing cavalryman, who in worshipping his quadruped, lost the complete use of his reason. Shades of Genghis Khan! What was to happen to polo, tent-pegging and pigsticking! This emotional disease affected the highest commanders. Lord Haig, a very fine horseman himself, stated that the tank would never replace the horse; and but for far-sighted enthusiasts like Fuller and Martel, the development of the tank in England would have been retarded with disastrous results at the outbreak of World War II.

Let us remember that the first law of war is expediency. In war no holds are barred. Atomic, biological, chemical and subversive warfare are all weapons in the armoury to be used without compunction should their use be expedient. There is no guarantee that our self-imposed restrictions will be observed by the enemy. This delusion has been the cause of the downfall of nations in the past. To pretend that new forms of warfare are more horrible than the conventional forms (if warfare can ever take a conventional form) is sheer hypocrisy. Lastly, let the rank and file fight imbued by tradition which fosters among them 'esprit de corps', but let those in high command be completely divested of all futile sentiments of tradition.

THE BASIC FIGHTING ARM

LIEUT.-COLONEL B.N. MEHTA

The intelligent layman, who seldom reads military history except where it is an adjunct to policy and high strategy, usually gets his conception of what a battle-field looks like from prints and pictures. These usually depict isolated spectacular incidents of the more romantic arms of the service. In the older pictures, it is usually a cavalry charge or the heroic defence of the guns. In more modern times it is the tanks spewing fire or aircraft diving to attack. Consequently the infantry, who are the main arm on any land battle-field, are often forgotten.

THE USES OF INFANTRY

From the beginning of history, it has always been the foot soldier who has ultimately played the main role in land warfare, and, even with every modern development and scientific discovery, it is quite clear that he will play this role in land warfare for some considerable time to come. His importance lies in the fact that he can traverse ground impassable to any other arm, that he can move comparatively freely and silently in darkness or fog, that he can physically clear and hold in detail an objective and that he is easy to train, obtain and maintain. Aircraft can saturate an area with fire and so can the artillery but this weight of fire alone cannot eliminate all the defenders. Armour can seize an objective if the ground is suitable for mechanised movement, but in holding it they become static and vulnerable, nor can they clear it in detail. Other arms of the service help the infantryman on to the objective and maintain him there. But where an objective has to be seized, cleared and held, and war is a series of movements from objective to objective, the ultimate task falls on the infantry.

THE FUNDAMENTALS

It is said that the infantryman belongs to the only trade in the world that still walks to its work. This is perhaps basically true, as the last stages of any tactical battle consist of clearing, reorganization and consolidation, and this task is done by infantry on foot. Modern methods of military transportation have, however, considerably shortened this walk, particularly

the approach march stage. Under present-day conditions, infantry is carried forward, in "Soft" vehicles, armoured infantry carriers and on the backs of tanks. Airborne infantry, in principle, is exactly the same. The aircraft, glider or parachute is only a method of transportation. Once delivered at the objective the task of such troops is exactly the same as that of any other infantry. The aim of these methods is naturally to give the infantry more mobility and get them to the objective quicker, but it also gives protection from long-range enemy fire when in transit, as well as getting them to the objective fresher. Under jungle conditions, the mobility of infantry is increased by pack transport to carry their heavier equipment, and by air dropping of equipment, supplies and ammunition. In semi-developed terrain the use of the helicopter to transport infantry is likely to be developed with advantage.

To make a slight digression, the marines are highly skilled sea-borne infantry and in the defence forces of the USA, they are trained and used chiefly for the first phases of an assault landing from naval ships and craft. It is interesting to remember that England first raised marines to maintain order among recalcitrant sailors on board His Majesty's ships. Later on, in the British Navy the marines had an artillery as well as an infantry wing, but these have been merged into one composite force. There has been some discussion as to whether the newly independent Asian countries should raise a Corps of marines for certain specialized duties on board ship and for assault landing. Though there may be something to be said for the idea, the argument is somewhat hypothetical while the navies concerned are of their present small size.

ASIAN PROBLEMS

Asian countries which are replanning their armies are faced with five problems in such replanning. First, a small national budget with many calls upon it. Secondly, a small industrial capacity necessitating the purchase of modern equipment from abroad, an expensive and somewhat undependable process. Thirdly, new frontiers which now require guarding. Fourthly, the need to employ the army on a large number of tasks in aid of civil power and, lastly, a large available manpower unfortunately untrained to allow quick military expansion.

These armies which will operate in semi-developed terrain, have an excellent opportunity of organizing their infantry on correct lines. Equipment, difficult and expensive to get anyway, can be reduced and stand-

ardized down to essentials. Non-essential frills, originally added for western European conditions, can be eliminated, while the acceptance of a tougher standard of living reduces the amenities required. There is no need for modernity to be sacrificed, but only that much must be taken from modern developments which will suit the role and conditions prevalent. In fact, properly planned, the new forces should be more modern for their actual task than the Western armies with their present limitations.

CONCLUSION

The countries of the East have some of the finest infantry material in the world; consisting mostly of solid, stolid farmer stock, from which the best type of infantrymen have always come, used to hard work and frugal and adverse living conditions. Properly organised and led, they can become that highly mobile and tough combination of "Cat burglar, gunman and poacher" which was General Wavell's definition of the ideal infantryman. In this context the lessons of the Korean War are highly significant, particularly for countries like India industrially backward but with perennially overflowing populations.

THE GHAZIABAD V.C

LIEUT-COLONEL M.E.S., LAWS, O.B.E., M.C., R.A. (RETD), F.R. HIST. S.

IN the cemetery at Ghaziabad is a grave marked "Gunner James Roots V.C.", who died in 1916 at the age of eighty. On the tombstone is recorded the official citation of the act of gallantry for which the Victoria Cross was awarded in 1858. But official records do not show that any man of that name was ever awarded the V.C., and in fact the citation recorded on the tombstone is that which appeared in the London Gazette of 27th April 1858 and which referred to a Gunner Richard Fitzgerald, Bengal Horse Artillery.

It is known from the records still preserved at the old India Office in London that Richard Fitzgerald enlisted in the Honourable East India Company's Bengal Artillery at Cork on 17th December 1851. He was a carpenter by trade, twenty years of age, five feet eight inches tall, with dark brown hair and of fresh complexion. After attestation, he was sent to the Company's Depot at Warley and reached Calcutta on 15th November 1852 on board the ship *Soubahdar*. From there he joined 2 Troop, 3 Brigade, Bengal Horse Artillery at Meerut; this Troop is today 144 Heavy Anti-Aircraft Battery R.A.

Some four years later another recruit joined this same Troop—a certain Gunner James Roots who had enlisted at Northfleet, Kent, on 2nd July 1856, giving his age as 20½ years and his trade as clerk. In appearance he must have generally resembled Gunner Richard Fitzgerald, since he was officially described as 5 feet 8 inches tall with brown hair and fresh complexion. He had reached Calcutta on board the ship *Minden* from England on 29th November 1856.

On 28th September 1857 during the Indian Mutiny campaign, 2 Troop, 3 Brigade, Bengal Horse Artillery took a distinguished part in the action at Bulandshahr. In this sharp encounter with the Delhi mutineers, a section (i.e. 2 guns) of 2 Troop, 3 Brigade, Bengal Horse Artillery under the command of Lieut. G. Cracklow was fiercely assailed by enemy infantry and one gun was for the time being out of action through casualties

to the team and detachment. The other gun got into action and held off the enemy, but when reinforcements arrived only two men—Sergeant A. Diamond and Gunner Richard Fitzgerald—were left to work the piece. Both men were awarded the Victoria Cross. It is known that Gunner James Roots was present at the action, but whether he was with Lieut. Cracklow's section or was with the rest of his Troop with the rearguard, cannot now be established.

In 1861 both Fitzgerald and Roots volunteered to transfer to the Royal Horse Artillery with their Troop and both served together in this same unit in India till the completion of their service. Gunner Roots was discharged to pension of one shilling a day at Kirkee on 19th July 1876. He was granted permission to remain in India and later he entered the service of an Indian railway company. Gunner Fitzgerald was also discharged to pension—probably about 1872—and regularly drew the small annual gratuity, awarded to holders of the Victoria Cross, until 1884. In that year all trace of him was lost and the War Office was therefore unable to continue the pension.

It has been claimed by the family of Gunner Roots that he enlisted under the false name of Richard Fitzgerald owing to his father's indignation at his joining the East Company's army: after his discharge it is said that he resumed his true name of Roots, thus explaining the disappearance of Fitzgerald. There is no single item of documentary record to support this story, whereas it is clearly established that there were two different men—Fitzgerald and Roots serving many years together in the same unit. The coincidence that James Roots, after falsely calling himself Richard Fitzgerald, should find another James Roots in the same Troop of Horse Artillery seems too far fetched to merit serious consideration.

It is unfortunate that the official discharge documents of neither of the two men concerned can now be traced and it is possible that they were among many others destroyed by enemy action during the last war. Nor has the actual Victoria Cross itself come to light and there is no record of its ever having passed through the hands of either dealer or collector. In fact there is absolutely no evidence of any sort to support the contention that Gunner James Roots was awarded the Victoria Cross either in his own name or in any other. It seems most unlikely that he would have deliberately discarded the name Fitzgerald under which he had served for twenty-one years and had won such distinction, to say nothing of the pension attached to the V.C., merely in order to resume his own name of Roots.

It was unfortunate that no check was made when the headstone was erected, but Gunner Roots was not buried in a military cemetery and during the anxious days of the first world war such matters may well have been overlooked.

That James Roots in his old age was convinced that he had been awarded the Victoria Cross is certain. Is it not possible and even probable that the old soldier became mentally confused as he approached the end of his long life? He had very likely seen and may actually have taken part in the action which gained two men the coveted Cross, and he may well many years later have come quite honestly to identify himself as one of the chief actors in the drama. This indeed appears the most probable explanation, but it should be emphasised that it in no way reflects on the honesty of a very gallant old soldier.

IMPORTANCE OF 'HUMAN APPROACH' IN INDUSTRY

'A CONTRIBUTOR'

LABOUR morale is a vital factor in the productive capacity of industrial establishments. It is much more so in the case of Defence establishments which have been assigned the important task of producing weapons and equipment and ammunition for the Armed Forces. Machinery and raw material do play an important part in industrial production. More important, however, is the human being who fabricates the machinery, exploits the natural resources and harnesses the two in the service of the people. An industrial worker, therefore, is the pivot of progress and development in the modern age of science and technology.

PRIME MINISTER'S ADVICE

Prime Minister Nehru in his address to the joint meeting of Superintendents of Ordnance Factories, Brigadiers Ordnance and Commandants of Ordnance Depots rightly laid stress on the friendly relationship between the management and the workers. He emphasised the necessity of human approach in dealing with human problems. Accepting the need for proper discipline among the workers, the Prime Minister said, "At the same time there should be a friendly approach in order to create a feeling that the management is anxious to instil a sense of partnership in a big industrial undertaking." The Director-General of Ordnance Factories also gave expression to similar views by saying, "We have to get away from the old approach of master and servant in labour relations, and think and act in terms of genuine partnership and earned leadership." It would be well if the officers in charge of industrial organisations under the Ministry of Defence pay due heed to the wise advice of the Prime Minister and the head of the Ordnance Factories.

BETTER WORKING CONDITIONS

India is industrially an under-developed country. Production, more production and even more production is the cry of the day. Experience in other countries has established that better working conditions lead to increased production of better quality. It is the earnest desire of the Government to improve gradually the social and economic status of the

workers. Several legislative and executive measures have been taken in furtherance of this objective. A great deal more has to be done to gain this end. The legislative and executive actions only indicate the policy of the Government in the matter. More important is the actual implementation of these directive principles by the officers who manage the huge industrial establishments and act as guardians of the workers under their command.

EXECUTIVE OFFICERS' DUTY

It is for the military and civilian officers who hold charge of Ordnance Depots, Factories and Workshops to appreciate that industrial relations are no different from ordinary human relations and that the workers can be enthused and not necessarily forced to do better work in a more disciplined manner. The task of these officers is undoubtedly onerous but they should not consider themselves as a class apart. If they identify themselves with the workers, and understand their environments, difficulties and causes of dissatisfaction, they can surely by a sympathetic human approach win their loyalty and confidence. Human beings require not only food and shelter but also appreciation of their services, sympathy, friendly gestures and positive encouragement. If a sincere effort, as indicated here, is made by a conscientious officer, he is bound to be regarded by his workers as their friend, philosopher and guide.

ESPRIT DE CORPS

Just as in military service, morale plays an important role in the sphere of industrial production. This, however, can be improved more easily by the adoption of a generous and benevolent attitude rather than by force or compulsion. Coercion is not in keeping with modern trends. The officers can, by a little human touch, arouse interest and desire among the workers to do their job thoroughly and well. A little sympathy can ensure contentment and foster a feeling of *esprit de corps* among the workers who may appear indifferent, undisciplined and sometimes boisterous.

FEELING OF PARTNERSHIP

As stated earlier, the present age is an age of science and technology. The country with the largest resources and capacity for industrial production is regarded as the most powerful and advanced. The might of a nation is at present judged not only by its fighting strength but also, rather more so, by the level of its industrial, scientific and technological advancement. The valiant soldiers, sailors and airmen, who guard our frontiers, depend, to a large extent, on the industrial apparatus of the country. With the

invention of the Atom and Hydrogen Bombs, the defence of a nation's freedom has become one and indivisible, and can be sustained only by the combined effort of the fighting forces and the common man, including the industrial worker.

It is the duty of the military and civilian officers, who control Ordnance Factories and Depots, to bring about an awakening among their workers and make them feel that the consolidation of the hard-won freedom is their own responsibility, and that the progress of the country depends on their toil and labour. They can by their example, thought and deed create among the workers a feeling of partnership in a common undertaking. A sympathetic human approach will certainly succeed in fostering among them a feeling of common endeavour in a common cause.

AN EXAMPLE

Not long ago, a joint effort was made by the U.S.A. and the U.K. to increase the level of industrial production in Britain by setting up an Anglo-American Council on productivity. This was formed in 1948 on the initiative of the late Sir Stafford Cripps, the then Chancellor of the Exchequer, and Mr. Paul Hoffman, the Economic Cooperative Administrator in the USA. The principal means to achieve this objective was to send to the United States several industrial teams, members of which were drawn in equal numbers from the Supervisory, the Technical and the Workshop workers' level. The Federation of British Industries, the British Employers' Confederation and the Trade Union Congress were the constituent bodies. Teams representing practically every industry in the UK visited the States to attend courses in the American methods of productivity and made valuable recommendations on return. One of such teams consisted only of Trade Union workers, selected from the various affiliated bodies of the British Trade Union Congress to contact their counterparts in America. This illustrates the fact that workers play an important and active role in the efficient functioning of industry and the economic advancement of the nation as a whole.

It is true that social and economic conditions in India are somewhat different from those prevailing in the USA and the UK. Considering that the other advanced countries approach the problem of productivity from the human angle, the need to lay emphasis on that aspect is far greater in our case. It would be to our advantage to learn a lesson from those countries, whose first consideration is the man behind the machine.

TRANSITIONAL PERIOD

It is sometimes pointed out that the workers in Ordnance Factories and Depots, though extremely conscious of their rights and privileges, lack a corresponding sense of their responsibilities and obligations. They crave for better conditions without improving their output. They even indulge in acts of indiscipline occasionally. These drawbacks in an average worker are perhaps due to his low standard of living, lack of education and rather unhappy environments. India, is, however, marching on the road to progress. With the general rise in the standard of living and gradual spread of education, the apathy towards one's duties is bound to disappear. The country has got first-rate human material and, given proper opportunities for development, that material will be second to none in performance. Industrial unrest and occasional lapses are also not peculiar to India. Similar incidents take place in more advanced countries as well. For us, however, this is a period when we should not get impatient or discouraged but try to get over these drawbacks by a sympathetic human approach and tactful handling of the workers.

Progress in industry, as in other spheres, will be imperfect without an understanding of man-management. If it is desired to make appreciable progress in the field of industry, it is necessary to establish an order under which a reasonable standard of life and a sense of social security is ensured.

"The engineer usually deals with stores, steel and cement whose utility and strength he can measure, but if he ignores the human element, he surely misses the spirit behind his work." These words were uttered by the Prime Minister when he addressed the Engineers of this country in connection with the Silver Jubilee celebrations of the Central Board of Irrigation and Power. They apply with equal force to all those who manage industrial establishments.

CROSSING SNOW-SWEPT SEBU LA IN SIKKIM*

BRIGADIER V. JAYAL, D.S.O.

THE crossing of Sebu La, the 17,400-foot pass in northern Sikkim, in spring may be an easy climb to an experienced or a professional mountaineer. To me and to the Political Officer of Sikkim, who invited me to cross Sebu La, the trip was more than a trek. In our amateur eyes it acquired the dignity of an expedition. We were conscious of the fact that if we succeeded in crossing the pass, we would earn the distinction of being the first party to cross the Sebu La this year. The pass does not open till the beginning of June. We crossed it in April.

Sebu La is a difficult pass. It passes through a rugged boulder strewn terrain. No pack animal can go over it. Slightly north of it is Donkia La, a higher pass, over which yaks can go.

RAIN RETARDED PROGRESS

We left Gangtok on April 21. Hardly had we crossed Penlong Pass when it started raining heavily. The jeep track to Dikchu, no more than a mule-path widened to take a jeep, became slippery and we had a frightening view of the river roaring down below. We were glad to reach the jeep-head at Dikchu. Beyond Dikchu we did the journey on horse-back. The rain continued, retarding our progress. We reached the Singik dak bungalow, dripping wet and uncomfortable, late in the evening when it was pitch dark. We consoled ourselves with the thought that the next day would dawn clear, because at this time of the year heavy showers are generally followed by bright sunshine in this part of the country. The next day we had a very fine view of Kinchenjunga from Singik.

Kinchenjunga's southern aspect has been photographed innumerable times from Darjeeling. The northern aspect, which is perhaps more beautiful, yields its charms only to the photographer who takes the trouble to go to Singik.

The march from Singik to Chungthan was interesting. We came

* Reproduced by courtesy of the *Times of India*. This trek took place in the summer of 1953 (Ed.)

across several ravines and waterfalls rushing down gushingly to meet the Tista river.

The variety of the flora makes this part of the country the botanist's paradise. Here and there one sees small patches of cardamom plantations. There is a bewildering variety of orchids and ferns, flowering weeds and shrubs. The scene is made beautiful by flitting butterflies of many colours. While one is lost in admiring this aspect of nature, one wakes up suddenly to the noise made by a gushing ravine. Lo, there it is, coming down a mountain. Suddenly it leaves its normal course and the onlooker sees a shower-like effect in the air. Then the ravine gets back to the beaten path, rushing impatiently to join the Tista.

We were travelling through the Lepcha country. Lepchas are an aboriginal tribe of Sikkim. A shy and docile people, their customs and ways of life hardly help them in the fierce struggle for existence.

The march to Lachhen brought us to the Bhotia country. The Bhotias are different from the Lepchas, the former live in higher regions and have an affinity with the Tibetans. Religion has a great influence on the lives of the people. All prominent places are marked with prayer flags, *Om Mani Padme Hum* is scrawled on prominent rocks. The Lama, with the prayer wheel and the rosary, is a common sight.

A marked characteristic of the people is their enthusiasm for observance of etiquette and ceremony in their social lives. This trait found its expression on the occasion of the Political Officer's visit.

FIRST GESTURE OF WELCOME

About two miles from the village the Political Officer was received by a well-decorated sturdy pony. This was the first gesture of welcome by the people of the village, a relic of the ancient custom, according to which a tired guest is provided with a steed. A little later the Lama band escorted the honoured guest to a small juniper-decorated canopy which sheltered him from the wind. At this place he was greeted by Lamas, nuns and by village dignitaries. The presentation of ceremonial scarves and the exchange of many other courtesies followed. Inside the canopy there was Chang, a beer brewed from barley. The Political Officer ceremonially sipped Chang, while the admiring crowd looked at him. He drank it rather slowly, giving the impression that he relished it. In the meantime, a procession was formed. When the Political Officer came out of the canopy, the Lama band played a tune of welcome.

At the village of Lachhen, beautifully situated at a height of 8,800 feet, apple trees were in blossom.

Next day there were more ceremonies which included a visit to the Gompa and to the Gompa of the nuns. At each place Tibetan tea was offered to the distinguished guest.

The nuns are not nuns in the strict sense. They are women who dedicate their lives to religion after having led a family life. They wear a special dress of crimson colour. Living in their own houses, they go to the Gompa on fixed days. They are a community of middle-aged and old women, who adopt a religious mode of life. They are not a burden on the common people as are the Lamas.

MEETING CALLED BY HEADMAN

At Lachhen detailed preparations were made for the crossing of the Sebu La. A meeting was convened by the Peepon, the headman of the village, to discuss the question of taking the Political Officer across the Sebu La. A kind of feudalistic system still holds good in this area. Matters of importance are referred to the village assembly for decisions.

The Lachhenpas, as the villagers of Lachhen Valley are called, were surprised to hear that the Political Officer wished to cross the Sebu La, at this time of the year. Nobody had crossed it yet this year. The Sebu La did not open till June and a crossing in April was much too early. The snow would be too thick. The village assembly showed a great deal of concern at this proposal, but the Peepon was firm and said that he had given his word to the Political Officer that they would see him across the pass.

Many porters had to be engaged because no pack animals go over the Sebu La. On the morning the march began, the porters were lined up and the loads placed outside the bungalow. Some loads were heavier than others. Who was to carry which was a question which agitated the porters. The problem had to be solved. The crisis was resolved according to an old custom. Garters used by porters to fasten their boots to their legs, each of which was of a different colour, were put in a hat; lots were drawn and off they went.

GATEWAY TO THE PASS

The next stage was Thangu, the last dak bungalow in northern

Sikkim. It is situated at a height of 12,580 feet and is the gateway to Sebu La.

The journey from Lachhen to Thangu was through a narrow valley with dense forest-clad mountains on both sides. Rhododendrons and magnolias were at their best, and nature seemed to be in a lavish mood. The grandeur of the scenery was comparable to the best anywhere in the world. Rhododendrons, flowering with bells of brilliant red colour, give a kind of glow to the green mountain side.

On the way to Thangu we saw small patches of potato cultivation. In summer months the Lachhen people migrate to higher regions to pasture their cattle.

Thangu is wind-swept and dreary and notorious for the headache one generally gets there due to the elevation, yet there is something very attractive about Thangu. The big boulders and the rocks, the mountain dominating the landscape, with the Lama Anden peak in the distance, make a very picturesque setting.

The next march was to a camping ground called Jachuhat. Now we were in a region which was bare of trees. Snow lay thick on the hill-side. The Kinchinjhow was far beyond. We came across the last pasture land of yaks at a height of about 14,000 ft. Here the ground was wet and spongy; snow was melting and sprouts of green grass were just appearing, providing bare sustenance to hardy yaks.

As we were admiring Nature, something fast moving caught our eye. It was a flock of wild big-sized sheep silhouetted against the white snow. They live at a great elevation and are seldom seen below 14,000 ft.

A snow-clad range which runs from the Kinchinjhow to Chango-Khang separates the Lachhen Valley from the Lachong. Over the Sebu La is the shortest route connecting these valleys. An ascent begins with big boulders strewn over the route. One has to be sure-footed and wary. Unused to high altitudes, we gasped for breath; the pass seemed a long way off. As we neared the Sebu La, it began to snow and the going became difficult. It meant halting every twenty steps for rest. We were already behind schedule, but on we had to go. At last we reached the destination.

We made a halt at the pass and had a glorious view of the snows all round. But as it was too bleak and cold on the pass, we hurried down

to a ledge for a little well-earned rest. We reached Mome Semdong late in evening. We were dead tired and fell fast asleep.

Next morning we bid farewell to the Lachhenpas who had brought us across the Sebu La. They had been companions in a very difficult journey. Their cheerfulness was a source of great strength.

We were now with the Lachhungpas, as the inhabitants of the Lachhung Valley are called. Their characteristics are the same as of the Lachhenpas.

The next day's march was to Yumthang which is the last bungalow in the Lachhung Valley which suffered devastation in 1950 when the Lachhung river was blocked by a landslide. When the dam so created burst a great deal of damage was caused.

The Political Officer's arrival at Lachhung was celebrated by the Lama band and ceremonies were again performed. The village of Lachhung is different from Lachhen. The floods of 1950 had swept away almost half the village. Big boulders showed Nature's fury.

FEAR GOD AND DREAD NOUGHT

VOL. I. THE MAKING OF AN ADMIRAL 1854-1904

ARTHUR J. MARDEN

Jonathan Cape, Rs. 22/8

The volume is a collection of selected correspondence of Admiral of the Fleet Lord Fisher of Kilverstone, from the year he joined the Royal Navy as a cadet till he assumed the high office of the First Sea Lord of the British Admiralty.

As Winston Churchill once said, "His genius was mainly that of a constructor, organiser and energiser". Without money or social influence, with few friends, with nothing but sheer ability, will power, love of country and the Navy, he emerged from obscurity to climb to the top of his profession. Once there, his reforming zeal and electrifying ardour for efficiency, left it vibrating with new and intense life.

Popularly known as 'Jacky' Fisher he is considered by some as one of the most colourful figures of modern British History and their greatest Admiral since Nelson. Fisher joined the Navy soon after the Nelsonian era and left it not many years before the outbreak of the 1st World War. His service in the Navy therefore saw all the vast changes that took place in the Navy between the Battles of Trafalgar and Jutland. Reading through his letters, we see Fisher's firm hand in the shaping of the course of the Royal Navy at the turn of the century. The developments he was instrumental in introducing varied from the introduction of the oil fired boiler and the Dreadnought to the establishment of the Naval War College and the common entry system for officers of the different branches of the Navy. He was a great believer in submarines and foresaw long before others how they would revolutionise Naval warfare.

Fisher was a fiend for administrative efficiency and organisational reform. His ability for organisational reform was recognised when at

His Majesty the King's instance, Fisher was appointed to the Esher Committee set up to reorganise the War Office on sound lines! Fisher had great faith in the British soldier but his contempt for the British Generals of his day was open knowledge. His appointment to the Esher Committee was certainly not popular with the Generals.

When Admiral Fisher was raised to the peerage in 1909 he adopted for the motto on his coat of arms 'Fear God and Dread Nought.' The choice was characteristic of the man, for he never knew what it was to fear anything in human shape. He could not suffer fools easily, and his criticism of them however highly placed they were, was ill-concealed. He was therefore as equally hated by some as he was admired by others, and the fact that he managed to rise to the top of his profession in spite of his many powerful enemies, was due in no small measure to the few friends he had, among whom were none other than His Majesty the King himself and the Prince of Wales. For the friendship and support of the King, Fisher was ever grateful, but one occasion when the King was intensely annoyed with the Admiral is amusing to recollect. Fisher was driving through London with the King when he recognised on the pavement a friend who happened to be a particularly pretty lady. Fisher stood up in the carriage to wave his umbrella at the lady, and thus received His Majesty's severe displeasure for his lack of manners!

A biography can be coloured, to bring out only those aspects of a person's character that a biographer wishes to. On the other hand, any intelligent reader can easily gain an insight into the real character of a personality from a number of his letters, written at a time when he could have had no inkling that they would ever be published. It is because this book is a collection of letters, written by this famous and controversial figure, many of them of a very private and confidential nature, that makes it more revealing than any biography could have been.

Anyone interested in Naval History or the life of a modern military personality will find this book of great interest.

V.A.K.

HISTORY OF UNITED STATES NAVAL OPERATIONS IN WORLD WAR II

SAMUEL ELIOT MORISON

Little, Brown and Company, Boston

The first seven volumes of the history which have been published so far, are available at the U.S.I. Library. When complete the history is expected to cover 14 volumes. The seven volumes now available are titled :—

Vol. I. Battle of the Atlantic, September 1939—May 1943

Vol. II Operations in North African Waters,
October 1942—June 1943

Vol. III The Rising Sun in the Pacific, 1931—April 1942

Vol. IV Coral Sea, Midway and Submarine Actions,
May 1942—August 1942

Vol. V The Struggle for Guadalcanal,
August 1942—February 1943

Vol. VI. Breaking the Bismarks Barrier,
22nd July 1942—1st May 1944

Vol. VII Aleutians, Gilberts and Marshalls,
June 1942—April 1944.

It reflects greatly to the credit of the author, the United States Navy and the publishers, that they have managed to complete publication of half their Naval War History, when most of the other countries which participated in the War are still in the process of compiling their war histories.

It is said that this work is in no sense an official history, but the fact remains that it was written by an American historian specially commissioned by the Navy to undertake this work. He was afforded access to official documents, with full authority to discuss them with the Naval personnel concerned. In the preparation of this history, he has visited various theatres of war on combat ships, and has taken part in several amphibious operations and surface engagements with the enemy. The Navy Department had

done everything possible to make his research exhaustive and to afford him first-hand impressions.

It was early in 1942 that Samuel Eliot Morison, a Professor of American History in Harvard University, suggested to President Roosevelt the desirability of preparing a full, accurate and early record of the activities of their Navy in World War II, and offered his services for the preparation of such a record.

A War History generally pictures to one's mind a number of large volumes of closely printed type with little to relieve the dull monotony of facts and figures, set down without regard to making the history readable to anyone except a serious research student. This has unfortunately resulted in frightening the ordinary reader from tackling such a subject.

In the History of the United States Naval Operations in World War II, the author and the publishers have departed radically from the generally accepted conception of a War History. They have succeeded in fact, in making it a most readable history. The average reader will find the subject-matter so presented that he believes he is reading a series of engrossing articles written in a fine, easy style. There are numerous photographs, both of American and enemy origin.

Unlike too many histories which are written as seen from the outside, this history was written in contact with the events, when most of the participants were alive. There is much of the human aspect in the way it has been presented. We also see the war as both the opposing sides saw it, for at the end of it, Mr. Morison had access to captured enemy Commanders as well as their war records.

Each volume of the History is a self-contained account of either one phase of the war in a large theatre, or a number of operations of importance in a locality. The reviewer would strongly recommend this publication to any prospective student of the Naval Staff Course. The complete history should find a place in all Service Libraries worthy of the name.

IDEAS AND WEAPONS

I.B. HOLLEY, JR.

Yale University Press, 1953, \$3.75

Though published in 1953, this book deals with the development of the aerial weapon in the United States during World War I. In the 178 pages of its text Professor Holley, who is consultant to the Army on military history, vividly brings out that the survival of cultures depends upon the speed in both the development and the utilization of weapons and that this requires a conscious recognition of the need for both superior weapons and doctrines to ensure maximum exploitation of their potential. He firmly believes that quality always pays better dividends than quantity. For the formulation of a doctrine, the author feels that adequate organisation for information as well as for making decisions is essential and that decisions must not be based on opinion, memory, limited personal experience or bias.

The book is divided into three parts. In the first the problem is presented with the example of the English Longbow ; the second deals with the general problem of the aerial weapon once the flight of a plane heavier than air became a reality ; in the last part the difficulties in the proper development of the weapon during World War I have been clearly brought out with useful lessons for the future in the last chapter.

The extensive footnotes, an extremely comprehensive index and a detailed bibliographical note running into almost 30 pages would be of real interest to the serious student of military history, and even to the casual reader they would indicate the thoroughness with which the study has been undertaken and completed.

The general get-up of the book is of a high order in the real "Yale" tradition.

As the author brings out in his conclusion, the problem of the aerial weapon in World War I was in no way peculiar and the history of the "guided missile" or the "atomic bomb" during the last war or since then would bear good comparison. He warns every nation of the world to ascertain that its military establishment is sufficiently well organised to develop and exploit to the utmost the newest weapons ; "failing here, the nation will repeat the sorry pattern of the air weapon wastefully groping forward

with each innovation." There is thus at least one exception where even if one 'prepared for the next war by studying the lessons of the last but one', much would have been gained.

G.S.W.

THE GOVERNMENT AND THE PEOPLE

PAUL HASLUCK

With illustrations

Australian War Memorial, Canberra, 25/-

There will be five volumes in the Civil series of the official history of Australia in the War of 1939-45. The political and social history is being presented in the first two volumes. This is the first volume for the period 1939-41 which describes in a most interesting way the rise of Australia to great power under the threat of Japanese invasion.

It tells of the aspirations, fears and ideologies of the people who form the government and reveals to the world the ambitions of a virile nation rising from obscurity to a prominent position in the Pacific. It is an epoch in the history of a nation with a future.

The episodes in this inspiring drama reveal clearly the desires of the Australian people to attain a position of responsibility to control the policies in the area surrounding them and a persistent effort to take over from the U.K. Government the mantle of power in this area.

This volume deals with the government and the people and as such it deals with the problems which beset every growing child—a rising nation, which is free, wants to defend its freedom, while defending rises to a position of power by the dynamism of its people, and finds at the end that it has not the capacity to attain what it set out for.

Here is clearly revealed the pattern of the policy to be adopted by Australia in the future developments in the Pacific. Those who are interested in the affairs of the Indian Ocean must read this with respect and learn lessons for future guidance.

The book is obtainable from Asia Publishing House, 17 Gunbar Street, Bombay.

R.S.

BETWEEN US AND HUNGER

C. MAYADAS, M.A., B.SC. (EDIN.)

Geoffrey Cumberlege, Oxford University Press, Rs. 10/-

Food shortage, i.e. cereals shortage, is a world problem and has been tackled as such in recent years by world organisations. In India the control of foodgrains, introduced during the War, has only recently been gradually and cautiously withdrawn, and the scarcity while it lasted was the cause of grave anxiety. We are not out of the wood yet. Natural calamities and any worsening of the international situation can cause a relapse. Also the rate of growth of the population is said to be ahead of the increase in food production.

This book written by a retired member of the Indian Agricultural Service will therefore help to bring home the need for continued and unceasing endeavour to produce more and more from the land. The author maintains that the country can be made economically strong by means of a sound but inexpensive agricultural policy. Not only should there be no hunger and nakedness, but the standard of living should be comparable to that of other countries. Soil conservation, irrigation, land reclamation, crop pests and the eradication of superstitions prejudices are among the problems here discussed. With the increased awareness of the importance of agricultural production as a result of the Five Year Plan, this book will be of practical value to many.

NOTES ON MEDALS

AWARDED TO INDIAN TROOPS 1778-1954

(With special reference to the Q.V.O.S. & M.)

Compiled by

LIEUT.-COLONEL R.L. MCCLINTOCK, C.M.G., D.S.O., R.E.

Madras Engineer Group, Corps of Engineers, Bangalore

Originally compiled for the period 1778-1947 by Lieut.-Colonel R.L. McClintock, then Commandant of Q.V.O.S. & M., which since 1950 has been redesignated the Madras Engineer Group, these notes have been brought up to date and published under the authority of the present Commandant. It is a useful historical record and work of reference. A limited number of copies is available from the Headquarters of the Madras Engineer Group, Bangalore. Price per copy is Rs. 5 bound, and Rs. 3 unbound.

REORGANIZATION OF THE ARMY

"FABIUS"

Lieut-Colonel Palit's talk* on the necessity for reorganising the Armed Forces, particularly the Army, on the Chinese pattern is certainly thought-provoking. The main advantages that would accrue from his suggestions can be summarised as follows:—

- (a) For a relatively smaller defence budget we will have a larger force for an emergency, thereby utilising the manpower potential.
- (b) If recruited widely the militia force should certainly assist in improving discipline within the country. It will also attract a larger proportion of the country's manpower to participate in the defence of the country.
- (c) It will decrease our dependence on foreign resources.

Thus the suggestion has considerable advantages. I would, however, state that these advantages are superficial only, and when studied in the light of our requirements, would be completely inadequate for the defence of the country.

My argument is based mainly on the different conditions which affect China and India respectively. Whilst discussing these I shall confine myself to the problems of the Army only.

The fact that China has a different ideology—totalitarian as compared to our democracy—has already been elaborated in General Chaudhuri's concluding remarks from the chair. Conscription of available manpower might not therefore be possible. Again the expense involved even under partial conscription may be far above what we spend now.

Regardless of what is stated in the Press or by Communist propaganda, China at present, as compared to India, is relatively less developed. The major portion of the country is mountainous and good land communications are limited. The employment of highly mechanised forces

* "Manpower and Modern Arms" published in the April issue of the Journal.

in such a region would be difficult. Such forces could probably be held up by relatively untrained and ill-equipped troops used in superior numbers as was the case in Korea.

India's communications and the terrain on her frontiers to the West and the East permit the employment of mechanised forces. These forces need not necessarily be employed on the same scale as in Western Europe, but they could certainly be more effectively used than either in China or Korea. A mass of half-trained riflemen could not hope to stem an invasion by such a force.

The nature of the threat differs too. China is a member of the Communist Bloc. No country, even the USA, could attack her with impunity, without fear of Russian intervention. This would mean the start of a Third World War. She also has an effective barrier separating her from possible hostile nations in the South and South-West. In the West and North she has a boundary contiguous to her ally Russia. She is thus reasonably safe from aggression in the near future and at the same time is assured of considerable support. She does not therefore require a large-scale standing armed force ready at all times, and can afford to employ her militia for civil purposes. However, regardless of her actual requirements, China is building up a great standing army which easily outnumbers what we possess.

India is however in a completely different situation. She is following a policy of non-involvement in world power politics. Support in any war therefore will not be forthcoming at short notice. She will thus have to rely on her own resources at least initially. Her relations with her neighbours have entailed a constant state of preparation by the armed forces for the defence of the country. This situation is unlikely to change for some time. A large militia would require at least a year's training to enable it to put up any useful resistance to enemy aggression. It is not likely that such a long period of warning would ever be given.

Countries with land frontiers must consider the size, equipment and efficiency of the forces that provide a potential threat to it, before coming to any conclusions as to their own defence requirements. Thus if a threat exists from a country with modern arms and equipment, it would be suicidal to confine ourselves to a purely militia army equipped mainly with infantry weapons.

The best solution therefore would be to continue to have regular

forces as at present. It is for consideration, however, whether we are getting the best value for the money being spent. It may be possible for us to so adjust expenditure that we have a bigger fighting force available than we have now. This could only be done if a detailed scrutiny were made of all components of our Army, and all those which were not vital for war scrapped.

We are also possibly slavish in our copying of ideas from Western nations. The frugality and simple living of our people could be exploited to our advantage. We may thus be able to increase the fighting strength of our Army while reducing the accompanying administrative echelons.

A reorientation of our defence policy may also be required. The guarding of our frontiers in peace time could progressively be taken over by the police or special organisations raised for this purpose. We may then be able to reduce our overall strength and spend more money for the purchase of modern equipment so as to increase the effectiveness of our Army.

As regards heavy equipment, the greatest need is for self-sufficiency. The stepping up of the establishment of defence industries is vital, if we are to retain our independent foreign policy. This may require heavy initial cost but would be economical in the long run. It would not only be cheaper, but would provide employment on a greater scale to a large number of our present unemployed.

In conclusion our need is not for a large militia but for a small, efficient and hard-hitting military force, and this in my opinion can only be provided by a regular standing army.

MAJOR A.M. VOHRA

9 Gorkha Rifles

The idea of a 'mass army' put forward by Lt Col D.K. Palit, Vr C in his lecture of 23 Feb 1954 published in the April 54 issue of the Journal is very interesting indeed. He suggests that, as we desire to avoid military alliances with foreign powers and cannot equip our forces with modern arms within our own resources, our Armed Forces must be based on manpower—our existing national potential. He has claimed that such a 'mass army', with a small professional core, would be an effective means of

defence of the country, and cites the case of Chinese forces in Korea as an example.

Whereas the effectiveness of a 'mass army' employing guerilla tactics, in delaying the advance of a modern armed offensive, inflicting heavy casualties on the enemy and making their occupation a very difficult job indeed, is accepted ; there is a danger of our drawing a wrong lesson from the Korean war. The U.N. Forces in Korea were neither suitably equipped nor suitably organised for the terrain they had to fight in. The poor lines of communications in that country handicapped these mechanised formations and restricted their manoeuvrability. The Chinese on the other hand, possessed tremendous mobility by virtue of their ability to operate across country and far away from road axes. If the Chinese were, therefore, able to stop effectively an offensive by modern arms and even reverse it, it was due to the particular circumstances of the Korean terrain. Such terrain is ideal for the employment of a 'mass army.'

Our Northern, North-Eastern and Eastern frontiers are possibly equally suitable for the employment of a 'mass army.' However, even in these areas, once a force is across the frontier regions and launches into the Gangetic Plain, modern arms can be employed to their best advantage. A 'mass army' is then unlikely to hold its own in even defensive operations. The fire power and mobility of modern arms would make little of the opposition of a 'mass army' in such terrain.

This point is put forward purely to draw attention to the limitations of a 'mass army,' even in defensive operations, in open terrain. We must not on the other hand, forget the limitations of our present modern army both because of its size and dependence on foreign countries for most of its equipment. If there is a choice between our present army facing an aggressor equipped with modern arms, on its own without allies and without outside material assistance, and a 'mass army' facing the same aggressor, the latter would probably be preferable. However, this is taking a hypothetical case. In these days of universal interdependence of states, it is unlikely that we shall have to face a modern armed force on our own. Except in case of a local conflict, (and even then we may not be left alone), we will have allies forced on us from one bloc or the other, whether we like it or not.

SECRETARY'S NOTES

The Institution's property at Simla consists of a small two-storied building, constructed of solid stone, and the land on which it stands, which is freehold. This has been for sale after the move of the headquarters offices to New Delhi. Property values in this once flourishing summer capital of India have however been declining in recent years, since the Central Government shifted its remaining offices down to the plains, and the Punjab Government also, who had their temporary capital at Simla, decided to move permanently to Chandigarh. Simla now remains the seat of government of the young State of Himachal Pradesh. This however would not have been sufficient for the economy of the hill station without a large influx of summer visitors from the plains. It was at this juncture, when Simla's fortunes seemed at their lowest ebb, that the Western Command headquarters moved there. This has had a healthy effect on the future outlook of Simla. It is hoped our property there will fetch a reasonable price before long, and we can then think in terms of a permanent headquarters office in New Delhi.

Lectures

There has been no lecture programme for the period May to July which is about the worst part of Delhi's hot weather. Lectures will be resumed as early as possible from August. Meanwhile members newly arrived in New Delhi, Delhi and Delhi Cantt are requested to get in touch with the Secretary's Office (Tel. 41/145).

Corresponding Members

The following Corresponding Members have been appointed in addition to those whose names have already been published:—

Group Captain H. C. Dewan, I.A.F.	No. 2 Air Force Academy.
Instructor Commander K.S. Rao, I.N.	For Commodore-in-Charge
	Bombay.

Subscriptions

Subscriptions are payable in advance. The financial year of the Institution is from January to December. Intending members can join at any time of the year, when back issues of the Journal for that year will be supplied.

Library

A list of new additions to the library is enclosed as usual with this issue. Suggestions from members for new books will be welcome. These of course will have to be of particular or of general interest to the Services. Funds do not permit of going in for pure literature or fiction which are in any case available elsewhere.

To order books by post members at out-stations will find the library catalogue very useful. This can be had at Rs. 6 a copy, postage extra.

New Members

From 1st April to 30th June 1954 the following members joined the Institution:—

- ARJAN SINGH, Air Commodore, I.A.F.
- AMAR SINGH GOGNA, 2/Lieut., Artillery (T.A.).
- AWASTHI, Captain Y.S., Signals.
- BACHAN SINGH, Major, Artillery.
- BALI, Captain R.K., A.S.C.
- CHATTERJEE, Flight/Lieut. S.N., I.A.F.
- DADWAL, 2/Lieut. H.C., Artillery (T.A.).
- DEV, Captain Y.P., Artillery.
- DEWAN, Group/Captain H.C., I.A.F.
- DIXIT, Major H.V., Signals.
- DUTTA, Major M.N.V., The Dogra Regiment.
- GALE, Dr. G.E.
- GHASI RAM, Lieut.-Colonel, The Mahar M.G. Regiment.
- GHOSH, Esq., A.K., I.C.S.
- HARISHPAL SINGH, 2/Lieut., Artillery (T.A.).
- HAZARA SINGH, Esq., P.E.S.(1)—Retired.
- HEM RAJ SHARMA, 2/Lieut., Artillery (T.A.).
- MANI SHASTRI, Captain C.S., The Maratha Light Infantry.
- MOHINDAR SINGH, Squadron Leader, I.A.F.
- MOHINDER SINGH, 2/Lieut., Artillery (T.A.).
- NAIB, Major V.P., Artillery.
- PARKASH, Lieut.-Commander S., I.N.
- *PHALKE, Major S.S., Engineers.
- REDDY, Captain M.G., Engineers.
- SABHERWAL, Lieut. L.N., The Jat Regiment.
- SAILO, Major T., The Assam Regiment.

SANJANA, Commander K.K., I.N.
 SESHADRI, Lieut. M.N., A.O.C.
 SITARAM, Squadron Leader A., I.A.F.
 SUDARSHAN SINGH, Lieut., Artillery (T.A.).
 SWAMY, Captain V.S.R., Signals.
 TEJINDER SINGH, 2/Lieut., Artillery (T.A.).
 THAKUR, Dr. RS., Defence Science Organisation.
 *TILAK Raj Puri, 2/Lieut., The Dogra Regiment.
 VIJAY KUMAR Suda, 2/Lieut., A.S.C.
 WALI MOHD, Major, J & K Training Centre.
 WHITE, Major N. DE VERE, The Royal Inniskilling Fusiliers.

SUBSCRIBING MEMBERS

Eight Officers' Messes and Units were enrolled as subscribing members during this period.

TO ADVERTISERS

THE U.S.I. JOURNAL

(ESTD. 1870)

IS AN EXCELLENT MEDIUM FOR GOOD CLASS ADVERTISEMENTS

- It is a Journal with a tradition of quality extending back over eighty years. Advertisements which are accepted will therefore bear the hall-mark of this quality.
- It is read by officers of the Army, Navy and Air Force as well as Civilian Officers. Its reader circle thus represents a class of people with a certain standard of living and steady purchasing power.
- It circulates in India, Pakistan, Ceylon, Burma, Malaya, Australia, New Zealand, Tasmania, South Africa, British East Africa, the United Kingdom, Canada, the U.S.A. and on the continent of Europe. All advertisements will therefore reach most countries of the world.

Rates on application to the Secretary

United Service Institution of India

KASHMIR HOUSE, NEW DELHI

The Journal of the United Service Institution of India

Vol. LXXXIV

OCTOBER 1954

357

The views expressed in this Journal are in no sense official, and the opinions of contributors in their published articles are not necessarily those of the Council of the Institution

EDITORIAL NOTES

Recent months have witnessed a noticeable lessening of tension in the international field. Following on the truce settlements in Korea and Indo-China there has been a general sense of relief in regard to that part of Asia, and the Prime Minister of India has been making well-timed efforts "to extend the area of peace". This in the nature of things will be a gradual process, and if successful more enduring. The experience of mankind has shown that there is no simple universal remedy for the world's ills. The best that can be done is to localise, and strive to cure, individual cases. The Mediterranean and the Middle East have provided three such notable instances in the last few months.

Trieste

Agreement on Trieste, initialled in London on October 5, has removed a constant source of friction between Italy

and Yugoslavia. At the end of World War I, on the dissolution of the Austrian Empire, the port of Trieste was claimed by both Italy and Yugoslavia, but went to the former. At the end of World War II, the port together with the surrounding area of some 420 square miles was taken from Italy and made a Free Territory. It had two zones A and B, according to the areas occupied respectively by the Anglo-American and Yugoslav forces.

Under the present agreement the Free Territory is divided more or less along the existing demarcation line between Zone A, administered by the Allied Military Government (AMG), and Zone B, by the Yugoslav Government. Zone A which contains the city and port of Trieste now goes to the Italians who have undertaken to maintain the free port facilities laid down in the 1947 Italian peace treaty. According to this treaty, to which the Soviet Union was a party, the Free Territory was to have been internationalized under a neutral Governor. Since the Powers could not agree on the choice of the governor, the territory continued under two distinct administrations. The AMG achieved much in rehabilitating the shattered economy of the port, and about a year ago gave notice of their intention to withdraw their troops and hand over their Zone to Italy. This was not favoured by Yugoslavia whose troops were ready to march into Zone A, tension mounting so high that there was danger to the peace of the world in this sensitive spot. The present agreement was reached after eight months of negotiations and signed by the Governments of the United Kingdom, the U.S.A., Italy and Yugoslavia. The settlement we are told is a *de facto* one and will become *de jure* only with the agreement of the Soviet Union which, as already stated, was a party to the Italian peace treaty.

Suez Canal Base

The Anglo-Egyptian agreement on the Suez Canal Base, signed in Cairo on October 19, opens a new chapter in the history of the relations between the two countries. In the words of the Egyptian Prime Minister, "a new era of friendly relations, based on mutual trust, confidence and co-operation, opens between Egypt and Britain and the western countries".

The negotiations this time proceeded on the fundamental assumption by both sides that while the Suez Canal was an integral part of Egypt, it was also of international importance, commercially and strategically. From the point of view of Egyptian sovereignty it was necessary that British troops must be withdrawn from Egyptian territory as soon as practicable; but circumstances may arise in the Middle East which may necessitate their return in the common interest, so that the valuable Base installations must be maintained in a state of readiness.

The agreement provides for the phased withdrawal of all the British forces from the Canal Zone Base within twenty months; as well as the keeping in efficient working order of parts of the existing base so as to be capable of immediate use in the event of Egypt, or any member of the Arab League defence treaty, or Turkey, being attacked. The Egyptian Government will be responsible for the security of the base, while H.M. Government will contract with private firms for the maintenance of the installations. The agreement at present valid for seven years is subject to review in the last year.

It has been said that any future major war would not merely be different from the last but utterly unlike it. British military thinking has no doubt been influenced to no small

extent by the changing strategy and techniques of warfare in this atomic age. It would seem reliance is to be more on highly trained and highly mobile strategic reserve forces which can be moved at short notice to any threatened area, rather than on keeping permanently stationed on the Canal some 70,000 troops who could be used with advantage to meet demands elsewhere.

Persian Oil Settlement

It was in October 1951 that the dispute over the Persian assets of the Anglo-Iranian Oil Company (AIOC) resulted in the closing down of the giant refinery at Abadan and the breaking off of diplomatic relations between Britain and Iran. With the nationalization of the oil industry in Iran had come into existence the National Iranian Oil Company (NIOC) which took over the refineries and oil fields of AIOC. The NIOC being in effect the Persian Ministry of Fuel and Power, and since the British Government owned more than half-share in the AIOC, the issue, apart from any legal aspects of nationalization, concerned the two governments.

The deadlock was resolved in August this year by the formation of an international controlling body, represented by a "Consortium" of eight oil companies, which takes the place of the former exclusively British organisation. What is of interest here is not so much the details of the financial adjustments between the two contracting parties, as the fact that normal conditions have been restored in this strategic area and that Persian oil will flow once again into the world's markets. It cannot be forgotten that the area was fought over in two world wars.

THE FUNCTIONS OF MANAGEMENT

COLONEL L. SAWHNY

Lecture on Friday, 3rd September 1954

[With Major-General J.N. Chaudhuri, OBE, in the Chair]

THE CHAIRMAN : Colonel Sawhny is no stranger to anyone here and most of us have served with him at one time or the other. He was one of the squadron leaders of the 16th Light Cavalry which I was commanding in our mad rush to Rangoon. He was more independent minded than many of us have been, in that at a certain stage of his military career he left the Army and moved across to civil industry, where he soon made his mark. We however consider that the early training he received in the army, and the Armoured Corps in particular, assisted him greatly in this business of management.

Recently when I was in Madras I heard that he had given a talk there on "The Functions of Management." Subsequently I heard that this talk was widely commented on and appreciated in some of the important daily newspapers. So I took the opportunity when he was coming up to New Delhi to suggest that he should give a talk to us here.

LECTURE

THE Duke of Wellington once remarked "there are no bad battalions, there are only bad officers." Even though the component parts which go to make up the organisation of industry vary in detail from those which constitute fighting forces, yet the basic truth of this statement can, generally speaking, be applied to industrial management. For we may take it that the working-class and the weapons of production in any individual country are of a fairly standard pattern, and therefore, that the effectiveness or otherwise of the use which they are put to, will depend substantially on the quality of management which they receive.

In the past management has often failed to achieve a proper balance between the rapidly advancing technical skills which the progress of science was constantly making available to it, and the higher skill which was needed to harness human co-operation to technical progress. This resul-

ted in the expenditure of constant care and thought by management on the preservation and improvement of machinery, and an insufficient study of the far more complex requirements of the men who operate the machines.

The days are past and gone when the "Hiring and Firing" type of management was able to achieve results by the power of fear. Even the days of the "Benevolent Despot" are numbered—for that technique is no longer acceptable either. Everywhere today people insist on a different type of leadership, one which will satisfy the basic human needs of an individual. The approach of industry today must be one which, through a proper direction of the efforts and ambitions of its people, seeks to establish it in an honoured place in the new society which mankind everywhere is striving to achieve.

In India, our national goal as expressed through the representatives of the people in Parliament is the establishment, as speedily as possible, of a Welfare State. The success or failure of industrial management will be judged by the extent to which it is able to identify itself with this national aim and to prove by its actions and its policies that it can champion the hopes of those people, who in working for industry, are endeavouring to ensure their security and well-being.

In this connection it is of interest to note the cleavage that has developed in the ranks of Britain's Labour Party, where the trade unions have rejected the advocacy by the intellectual left wing of that party for a more rigorous State Control, and a speedier nationalisation of industry, as a means of achieving the ideal of a Welfare State. They have apparently decided as a result of the experience which they have gained in trying out the theories of public ownership that the Welfare State in England will be more rapidly realised through vigorously directed free enterprise.

It has truly been said:

"You can buy a man's time, you can buy a man's physical presence at a place; you can even buy a measured number of skilled muscular motions per hour or day. But you cannot buy enthusiasm; you cannot buy initiative; you cannot buy loyalty; you cannot buy the devotion of hearts, minds, and souls. You have to earn these things."

Fyodor Dostoevsky once wrote "If it were desired to reduce a man to nothing, it would be necessary only to give his work a character of use-

lessness." The industrial revolution a hundred years ago which replaced the tools of the independent workmen with machines owned by lenders of capital, transformed handicraftsmen who were their own bosses into hired hands subject to the orders of the manager. Gradually, men felt themselves swallowed up by a vast impersonal machine, which rubbed away their self-respect and, in a way, their identities. In anger against the betrayal of the human spirit by the industrial revolution, millions of workers listened to the false promises of Marx's counter-revolution which, as has been proved, offered only a greater loss of self-respect and, in the end, human degradation and slavery. Now a second industrial revolution, quieter but more profound, is making itself felt in industry. Its name is Human Relations, and its purpose is to give the worker a sense of usefulness and importance. Its goal is to make the worker's life more joyful by making his work more meaningful, and by increasing his sense of personal dignity and self-respect.

Recently skilful analytical surveys have exploded the theory that workers wanted only more money. These surveys proved that wage disputes, the ostensible cause of 80 per cent of all industrial conflicts, were only secondary causes. They showed that some of the industries most plagued by strikes were those where the highest wages were being paid. The conclusions reached by these surveys showed that the chief desires of workers were :

1. Security.
2. A chance to advance.
3. Treatment as useful and essential members of society.
4. Dignity.

It is in the light of this background that we should consider what the functions of Industrial management are.

To start with let us try and define what an Industrial Policy should be :-

INDUSTRIAL POLICY

The Government of India has accepted the principle of a "Mixed Economy" so far as the industrial development of this country is concerned. This concept envisages the co-existence of State Controlled and Free Enterprise operating alongside each other within clearly defined spheres, and in accordance with a nationally accepted long-term plan. Within this overall national policy, that of the Free Sector, in addition to being

based on sound principles leading to the provision of material goods and benefits, must also be rooted in the spiritual and psychological fabric of Indian life.

In order that this link with spiritual values is maintained, an industrial policy should be ethical and accepted as being above suspicion. Moreover, such a policy must set a purpose to which men can respond with a high sense of duty and service to their fellow men. It should inspire the work people to loyal and harmonious effort in the secure faith that their endeavours are contributing towards the betterment of society. Unless this spiritual foundation forms the basis of an industrial policy, it is in danger of being dominated by the motive of materialism, and when this occurs, industry finds itself back in a position which has been rejected as having no place in our new world of enlightened values.

Provided that an industrial policy fulfils the fundamental human needs of the individual as well as those of the industrial society as a whole, it will automatically accomplish its material aims. For then the whole picture of free enterprise and the necessity for a fair return on invested capital will fall into place and be seen in its true perspective.

Finally it is of the utmost importance that an industrial policy should be positive, attainable, easily recognisable and easily understood by the men and women who go to make up the society of industry. This in its turn means that it must be as sound in detail as it is in broad principle, and that it can be analysed, implemented and co-ordinated, down to the lowest level necessary.

It will be realised from the foregoing that one of the most significant factors in modern industrial development is the great emphasis which is now laid upon the responsibility of higher management. The complexity of business administration, when considered against the background of the social revolution now taking place in India, shows that a high degree of Industrial Statesmanship is called for.

We must next define what the responsibilities of management are.

THE RESPONSIBILITIES OF MANAGEMENT

Firstly, a successful and efficient management must guarantee adequate rewards for the services rendered by its members in addition to providing them with reasonable incentive. Apart from providing a fair return on invested capital, it must also cater for the reserve funds which are necessary

for the maintenance of the industry and for its future development. In achieving these aims management must shoulder the responsibility of holding an honest balance between the various interests reflected in its enterprise ; that is, its work people, its shareholders and the consumers of its product.

Secondly, management is always responsible for all aspects of technical efficiency. Costs, the quality of production and the volume of output, by their very nature, constantly engage the attention of management. What however management must also remember is that alongside its search for the improvement of production techniques, it is equally concerned with the building up and maintenance of a high morale, and a happy attitude of mind and spirit among its workers. To achieve this, sound leadership and effective organisation are necessary. Once it has been effected, technical efficiency will automatically flow from it.

Thirdly, while management must be prepared to take advice from all those who are in a position to give it, it must at the same time be prepared to make, and to stand by, its own decisions. It is an inescapable function of management to face up to the making of such decisions as are necessary to ensure that the endeavours of its organisation are directed towards the attainment of the ultimate aim. A weak or vacillating management which attempts to pass on the responsibility for decision making to others, stands immediately self-condemned. It will lose the respect and confidence of those who look to it to provide for their leadership and security.

Fourthly, management is responsible for the selection of its staff, for a definition of their functions and for training them to be able to undertake their responsibilities. Management must further ensure that it is prepared to delegate both responsibility and authority down to whichever level is necessary in order to ensure efficient working.

Finally, management is responsible to see that its actions and policies always further those social and political aims which are in the interests of India's progress, and are never in conflict with them.

Having defined these responsibilities, let us next consider the attributes which management should have in order to be able to fulfil them.

LEADERSHIP

1. The first attribute which a management must have is that of leadership, as on this will depend the effectiveness of its direc-

tion. Leadership must never be confused with the power of imposing the will of one person on another, or that of management upon its workers. Rather it means the capacity to harness the total ability of the personnel comprising an industrial organisation and to inspire them to an active and enthusiastic participation in responsibility.

2. Such leadership can only be provided by men of ability. It is not only the qualities of character and personality that are the marks of a successful leader. There must also be the quality of intelligence which permits the giving of reasoned counsel ; the quality of sound judgement arising from experience and knowledge, that provides a special aptitude for anticipating future situations. In addition to these qualities, a leader must be prepared at all times to set an example by his own behaviour and to live up to the theories and precepts which he advances. Once such leadership is provided, then the management concerned will be in the happy position of having people working *with* it and not *for* it. This spirit of leadership once established at the top level of management will certainly seep downwards to the lower level of middle management, and finally to the lowest level of the supervisor, who should be regarded as the " Hard Core " around which industry is built.
3. It is of interest to know that in the Defence Services, in spite of the tremendous weapons of destruction which science has made available to modern armies, the maintenance of a high morale is still considered to be the most important single factor in the successful prosecution of war. In order to achieve and maintain this morale among its soldiers, sailors and airmen, the Defence Services concentrate at every stage of an Officer's career, on leadership training. There is a mistaken conception among civilians that Military leadership is based on military discipline and on a fear of punishment. In fact Military leadership implies the negation of punishment. Its basis is to provide mutual confidence between the officer and the man by which the latter will automatically follow the former in the secure knowledge that to do so is in his best interests, and that he will never be let down. I venture to suggest that if the same high degree of morale prevailed among

the workers in industry, as it does among the men of India's fighting services, the advancement of industrial progress could be readily assured.

DEFINITION OF AN AIM

If people are to combine for a common purpose they must be told what that purpose is. It is the responsibility of management to state with utmost clarity the purpose and object of its organisation, and then to ensure that all its policy decisions further the implementation of the overall aim. It is a cardinal task of management to discern with accuracy those economic factors and trends which are likely to influence the future welfare of the enterprise, and to ensure that, except for the occurrence of unforeseeable events and the projection of factors over which it has no control, its resources will be at least as economically productive in the foreseeable future as they are today. It is for the management to take decisions today on the problems which will confront the enterprise in the future.

A proper discharge of this very vital function of management requires that it should constantly examine the main purposes of its existence and be ready, if changing circumstances warrant it, to redefine and reorientate that purpose. To put it briefly, it is the responsibility of management to decide what the business of the enterprise really is and having done so, to make quite certain that every single man and woman employed by it understands clearly the ultimate end towards which their efforts are directed.

The statement of an aim, and the knowledge that the resources of an enterprise are being efficiently directed towards the achievement of that aim, are of primary importance to the morale of the work people. Unhappily in many of our industries today men are recruited and put to work without being told what the purpose of their endeavour is. Taking an example from the Cement Industry: clearly a man who is hewing limestone in a quarry, will be infinitely more inspired by his work when he knows that he is performing a vital process in the manufacture of a nationally required building material, than if he is merely concerned with the somewhat depressing thought that wielding a hammer and breaking stones for eight hours a day is the sum and substance of his existence.

The fighting services lay paramount stress on this vital question of explaining the object of an operation to people before they are asked to accept it and to devote their energies towards achieving it. For a fortnight before

D-Day, Field-Marshal Montgomery who was in command of the forces which were to land on the French coast and invade Europe, visited every single Unit under his command and addressed the men personally. He told them of the aims which the High Command intended to achieve. He described to them the situations which would develop on the army front, on the corps fronts, and on the various divisional fronts, and then depicted in detail the role which their own particular Units would be called upon to play, and how this role fitted into, and was an essential part of, the great design to liberate Europe. He told them further of the support they would get from fighter aircraft in the sky, and from the ships at sea. He convinced them that no detail had been overlooked, and that no effort had been spared to give them the best chance of achieving their appointed task. Finally, he told them it was they, the individual soldiers, who would be the heroes of the battle, for it was to them that their country had entrusted the preservation of its freedom. The gallantry and courage with which the assault on Normandy was carried out is now a matter of history. Surely from this example management of industry has a lesson to learn, and that lesson is that it must provide for its work people the inspiration of an aim, and fortify them with the knowledge that they will be well cared for and well led in a united endeavour to attain it.

CO-ORDINATION

Management must continuously carry out the function of co-ordination. By this it is meant that management must ensure that the day-to-day working of its industry is directed towards the fulfilment of its larger policies, be these financial, technical or social. Unless this is done, there will inevitably result a certain waste of effort, and if this principle of co-ordination is seriously violated, there will ensue a disintegrating process, which can ultimately lead to disaster. Co-ordination must be exercised at every level in the organisation of an industrial administration. Though the exercise of co-ordination is by no means confined only to top level management, yet it is at this level that it must be given its clearest definition, in order that the process is properly implemented at subsidiary levels. Co-ordination implies, as has been stated earlier, the delegation of authority and responsibility down to the lowest level necessary to achieve effective and expeditious working. The final test against which this delegation of duties should be measured is that a man should be given as much responsibility as goes with the functions of his task, and must be provided with as much authority as is necessary to undertake the responsibility.

Co-ordination must never be allowed to degenerate into a rigid demand for the acceptance of conformity. Wherever possible, executives should be permitted and encouraged to run their respective departments in their own way, with as little interference from above as possible. Further, they should be encouraged to use their own initiative in taking decisions. Management must however be careful to see that individual executives do not misconstrue an absence of control as implying the delegation of authority to them to take top level policy decisions. There is a distinct danger of this happening in the case of the individually brilliant executive, particularly of the "technical" variety, whose conviction that he knows best is unshakable. In such cases management must not hesitate to insist to the point of disciplinary action, if necessary, on its right to see that the organisation functions within the framework of defined policy. In the same way as a brilliant but selfish individualist often makes a poor member of a football team, so a specialist who does not conform to overall direction can create disharmony in an industrial organisation. An industrial team, like a football team, depends on the smooth and efficient co-ordination of the efforts of all its members for success. However good any particular individual's performance may be, it is the general performance of the whole team that ultimately counts.

STAFF

A vital factor in the success of any business is the proper selection of its administrative staff. In this matter, management has the responsibility not only of making the right selection, but having made it, of providing the fullest scope for legitimate ambition and individual advancement. A management which lacks self-confidence, and consequently is jealous of safeguarding its powers and authority, will inevitably select staff of a submissive and docile type, people who will obey without thought or question. It will not take the risk of engaging able and independently minded employees for the fear that it may one day be supplanted by them. In fact, it would be scared that it might suffer the same fate as

"The young lady of Niger
Who went for a ride on a Tiger
They came back from the ride
With the lady inside
And a smile on the face of the Tiger."

A really go-ahead management which understands the mood of the present times will do the direct opposite. It will seek out men capable of evolving

policies within their own sphere, and will train them to rise to the highest positions.

Lastly I will deal with the question of Management Training.

MANAGEMENT TRAINING

As a rule administrative institutions are self-perpetuating and management, not being an exception to this rule, is therefore concerned with making provision for its continuity and succession. Even the most clear sighted and imaginative management cannot be expected to forecast future events with certainty, and the decisions which it makes for the future are at best intelligent guesses. What however it can, and indeed must do, is to make certain that it provides the enterprise with men who will be capable of making the right decisions when the time comes, and who are fully trained and tested during the present to do so. No management can rely on a constant supply of geniuses being made available to it on an as required basis. Consequently it must so train its staff that its industry is capable of being run efficiently, during normal times at any rate, by men of average ability with a robust sense of purpose and duty towards the organisation that employs them.

The form that this training should take is occasional periods of technical and academic instruction, followed by long periods of practical experience on the job itself. Even though it is clear that the education of a future manager requires constant care and planning, yet in India today, as often as not, it ends with the attainment of a university degree. For, as yet, we have no institutions which are designed to impart instruction in management training. The young business executive is left "To train himself" and "To learn as he goes along." This haphazard and unplanned education of the managers of the future is a very serious national shortcoming which requires to be remedied as early as possible.

Here again if I may draw upon my experience with the Indian Army, I think that industry can learn something from the manner in which the education of the Army Officer is organised. Throughout an officer's career he is perpetually sent to school. At every stage of his advancement he is taken away from the cares and responsibilities of carrying out his day to day duties and is sent to do a course of instruction where he is taught the technical knowledge necessary to enable him to cope with the future work which has been assigned to him.

At the most junior levels the Army Officer is sent to schools of instruction where he is taught the proper handling of small arms weapons ; the functions of a leader concerned with the tactical handling of a minor infantry unit ; or again of the technical duties involved in the maintenance of sub-unit inter-communications. At the peak of their careers, the future Generals, Admirals and Air Marshals of the Fighting Services, upon whom the responsibility for the defence of their country rests, are sent to institutions like the Imperial Defence College, where they are taught the integrated use of all weapons and organisations of war, as also the functions of the various civil administrations and of the industrial organisations, which go to make up a nation's war effort. When it is appreciated how, from a comparatively small number of professional soldiers such a rich harvest in ability and national leadership has been reaped, then it will be realised that this careful system of training at all stages of a military career pays the most handsome dividends.

If business will face up to this problem of training its leaders of tomorrow, it will find, as the fighting services have found, that formal instruction and practical experience must be planned and provided for throughout an executive's career. Practical experience is automatically taken care of by the fact that in the course of his career the business executive is promoted from time to time to higher and more important posts each requiring a greater degree of intellectual application, and a heavier responsibility than the previous one. The academic and technical instruction should, I suggest, be so planned as to provide training at two stages of a business career ; the first when the young executive has, after say six or eight years, assimilated experience of direct practical management at a comparatively low level, and needs to be taught the professional techniques which will enable him to advance from low level practical management to the more complex and indirect role of co-ordination that his future work will necessitate. The second should be at a stage just before a Manager, who has proved himself worthy of promotion, is required to function at a really high level of responsibility involving the integrated problems of various industries, as also their relation to governmental policy. At such a time he must be permitted to lay aside the cares of his daily work, and spend six months or a year in an atmosphere of intellectual stimulation where a deep study can be made of the science of high level management. During this time he will also have the opportunity of exchanging ideas and experience with his fellow students drawn, as they will be, from the various official and non-official organisations that represent a nation's industrial effort.

At the moment in India there are no such courses available for the education of future managers. Recently, however, I was very pleased to read that the Minister for Commerce & Industry has taken the initiative in calling for the formation and early establishment of an Administrative Staff College. The object of the instruction to be given at this College will be much the same as its Military counterpart, namely a study of the higher techniques of the executive's profession after he has assimilated sufficient years of practical experience. I understand however that the average age of businessmen going to this course will be between thirty-five and forty, and also that the duration of the course itself will be for a period of approximately three months. I feel that there is some danger that the course will suffer from the disadvantages of being "too little and too late." "Too little," because I doubt whether a period of three months is sufficient to achieve the education which I have described as being necessary, and "Too late," because of the average age of student entry. Nevertheless, it is definitely a step in the right direction and as such is most welcome.

CONCLUSION

The functions of management, though manifold and varied, are at the same time clear and inescapable. Having formulated and laid down its aim, it is its duty to ensure that this aim is achieved through co-ordination and by evoking the enthusiastic and voluntary co-operation of those it employs. Having defined the duties and responsibilities of its staff members, it is responsible for their proper selection and training. Its function is to see that authority and responsibility are delegated down to whatever level is necessary for efficient working. It must eschew rigidity and provide a flexible organisational structure permitting of intelligent forward planning. It must constantly watch over the economic efficiency of each one of its operations. Finally, it must see that its human resources are utilised to the fullest advantage through justice and decency and all that is compatible with the rights and dignity of man.

DISCUSSION

MAJOR-GENERAL J.N. CHAUDHURI: While you say that the Government of India have not really taken any active steps so far to provide management training, is it not possible for the bigger industries to undertake the responsibility of training their own people, as you have very rightly suggested, in their own schools?

THE LECTURER : They should, and indeed they must. As I said in my talk, one of the functions of management is to perpetuate its succession, and this in its turn implies that it must cater continuously for the training of people who are eventually to succeed existing high level management. In England this is being done today at an institution which is known as the Administrative Staff College. It would be most desirable if the larger industries were to establish a training College on similar lines in our country. I understand that some business houses are thinking of doing so.

MR. J.S. BALI : One of the questions that probably faces Industrial Management from day to day is the fixation of wage and possible retrenchment, in view of the changing economic conditions from time to time. How does efficient industrial management deal with these matters without creating unrest and further problems ?

THE LECTURER : Your question deals with two distinct subjects : one is the constant demand for higher wages, and the other is rationalisation. So far as the former is concerned no one will disagree that it must be the aim of industry to provide increasingly better living conditions for its work people, until such time as a worthwhile standard of life is made available to them. In an industrially under-developed country such as ours this means the creation of more and more wealth through industrial development, and then its equitable distribution. The important thing is to try and ensure during the interim period between present-day conditions and the achievement of an eventual living wage, that both management and labour take an honest view of what is available for distribution to the work people. Unless this is done, unyielding attitudes, and uncompromising positions will be taken up on either side, which will result in the creation of bitterness and ill feeling, and hence in the retarding of industrial growth.

So far as the question of rationalisation is concerned, this problem must be tackled in accordance with social and economic conditions which prevail in our own country, and not from doctrinaire and inflexible stand-points. In view of our large and increasing population every effort should be made to have as big a content of labour wages within the cost structure of production as is possible. At the same time the employment of redundant and unnecessary labour must not be allowed to stand in the way of industrial efficiency, and the progressive increase of national wealth. It will interest you to know that one of the States Ministers recently said that a substantial number of workers had been thrown out of employment in a particular industry in his State, not because of rationalisation, but precisely

because there had not been rationalisation, which had resulted in that industry becoming inefficient and eventually having to close down.

MR. J.S. BALI: What is the reaction of Industrial Management to the compulsory provisions of adjudication and conciliation under the labour legislation ?

THE LECTURER: I am convinced that ultimately the healthiest relations will be developed by direct negotiations between management and labour without the intervention of a third party in the form of Government. This however presupposes that both parties are so placed that neither can bully nor browbeat the other in a dispute. Accordingly I would say that though the existing system of statutorily imposed conciliation and adjudication cannot immediately be done away with, yet management must seek increasingly to resolve its labour problems by means of direct negotiations. It should only fall back on Government machinery for the settlement of disputes when all other avenues have been explored and found wanting.

THE CHAIRMAN: Those amongst you who take an intelligent interest in your profession, I am sure, felt that the first part of Colonel Sawhny's talk today, with the change of a few words, could be usefully employed by any formation commander to explain to his subordinate formation commanders how they should run their formations. It is very interesting to find that the principles of leadership and the principles of management, whether in industry or in the army or in any other branch of human endeavour you might like to think of, must basically be the same. Consequently the answer to all the questions that Colonel Sawhny was asked, and answered I think most ably and at some length, is future planning. Unless there is future planning no worthwhile progress can be made.

Those branches of the Services which employ civilian labour will find this lecture of special interest. It will be published in the U.S.I. Journal, and I hope it will receive even wider publicity. I want to thank Colonel Sawhny on behalf of the U.S.I. and on behalf of all of us present here today. (*Applause*).

STUDIES IN THE ART OF WAR

BRIGADIER B.M. KAUL*

WARS have been a persistent fact in world history. They have great causes and little occasions. When wars come, they dominate our lives. They are like a tempest which blows through our streets, lifts the grey hairs of statesmen, invades our colleges, overwhelms our scholars and virtually challenges every institution of our society. They offer inescapable tests to our private lives and public devotions, the stability of our economic and political structure and to the sagacity of our foreign policy. There is no aspect of our existence which remains untouched.

But wars are not acts of God. They grow out of what statesmen do or fail to do. They result from a nation's policies or lack of policies. Once they come, victory or defeat also ensues from what we do or fail to do.

It is essential, therefore, to study the development of strategy through the ages. If we are to have a durable peace, we must clearly understand the part armed forces play in international society. Eternal vigilance in the causes of war and the principles which govern its conduct is, therefore, necessary. Remember, it is not force in itself which is wrong but the purpose to which force is sometimes put. As Pascal said about three centuries ago, "We must realise that justice without force is impotent and force without justice tyrannical. We must, therefore, combine justice with force."

Strategy is not merely a concept of war time, but is an inherent element of statecraft at all times. It so dictates the policies of a nation that the resort to war is either rendered unnecessary or is undertaken with the maximum chance of victory.

As society becomes more highly industrialised, the art of war becomes more complex. It, therefore, concerns us all. All of us must, therefore, realise that it is our concern.

* From a lecture to the U.S.I. in 1953.

SUN-TZU

Twenty-five centuries ago, a Chinese named Sun-Tzu wrote a book called the art of war. Although the chariot has gone and the weapons have changed, the maxims laid down in this book still hold good, because the author dealt with the influence of politics and human nature on military operations. which proves how unchanging the principles of war are.

Sun-Tzu's book brought him to the notice of King Ho-Lu who asked the author if his theories on discipline could be tested out among women. Sun-Tzu readily agreed and collected 180 women, divided them into two Companies and placed one of the King's favourite concubines at the head of each. He armed them with spears and explained to them the difference between the front and back and between right and left. He then told them to look straight ahead when ordered "eyes front" and to turn left and right when ordered "left or right turn" and to turn right round towards the back when ordered "about turn". The girls said they understood these instructions. Then, to the sound of drums, Sun-Tzu gave the order "left turn", but none of the girls turned left. They only giggled. Sun-Tzu then told them firmly that if an order is not obeyed, because it is not properly understood, the leader who gives such an order is held responsible. Then he thundered "right turn", whereupon the girls did nothing except giggle again. He then said if an order is understood by all and yet not obeyed, the officers who Command those who disobey must be held responsible and thereupon ordered that the two Company Commanders should be executed. The King, who was watching the scene from the top of a pavilion, seeing that his favourite concubines were about to be put to death, hurriedly sent a note, asking Sun-Tzu not to kill them. Sun-Tzu sent back a reply that having once received a Commission as General of his forces, there were certain Commands of His Majesty which, acting in that capacity, he was unable to accept. Accordingly, he had the two women executed and installed the next two in order as leaders in their place. The drum was sounded once more and he ordered "left turn"—"right turn"—"about turn". This time the girls obeyed implicitly without uttering a sound and carried out various movements with utmost precision. This may be an old story but its moral is true to this day. It proves the importance of discipline in the army. It also proves that certain maxims remain eternally true.

There are four fundamentals which have governed the conduct of wars throughout history. Firstly, quality of the Commander, his personality,

courage, character and professional ability. Secondly, quantity and quality of troops, their professional skill, physical fitness and morale. Thirdly, resources, *i.e.*, quantity and quality of weapons and equipment; stocks of food, arms, ammunition, equipment, transport and fuel. And, fourthly, communications, including rail, road, inland waterways and sea. There are some additional factors which also play an important part in all wars. They are terrain, weather and luck. Referring to the element of luck, Napoleon described war as "calculation of probabilities." All Captains of war are agreed that it is not all luck and gamble and have considered it essential to study the experience of their predecessors and to master the essential Principles of War.

Sun-Tzu said it is the rule in war that if your forces are ten to the enemy's one, to surround him; if five to one, to attack him, if twice as numerous, to divide him; if equally matched, to offer battle; if slightly inferior in numbers, to avoid him; if quite unequal in every way, to flee from him. The army, according to Tzu, is the bulwark of a State. If it is complete in all respects, the State will be strong. If it is defective, the State will be weak. If you know the enemy and your own troops, you need not fear the result of a hundred battles. If you know your own troops but not the enemy, for every victory gained, you will also suffer a defeat. If you neither know the enemy nor your own troops, you will succumb in every battle. Hence a General is skilful in attack whose opponent does not know what to defend and he is skilful in defence whose opponent does not know what to attack.

Sheridan once explained the reason of Grant's victories by saying that whilst his opponents were kept busy wondering what he was going to do, he was thinking most of what he himself was going to do. Frederick the Great, in his instructions to his Generals, said, "Those who have had but little experience, attempt to protect every point; whilst those who are better acquainted with their profession, guard against decisive blows at decisive points and acquiesce in smaller misfortunes to avoid greater. In other words, they keep away from side-shows".

The functions of a General are infinite. He must, of course, have courage, intelligence, professional knowledge and physical fitness. He should never let his recklessness lead to destruction, let cowardice lead to capture and let over-solicitude for his men impede his plans. He should have the ability to improvise and the ability to penetrate the minds of

others, remaining impenetrable himself. He should be loved, feared and obeyed. His orders should be precise and simple. He must see an opportunity and seize it. This is the greatest quality in the art of war and is the test of the most elevated genius. Unless a man has a born talent for war, he will never be more than a mediocre General. It is the same with all talents. In painting, music or poetry, talent must be inherent for excellence. That is why we see such few outstanding men in these sublime arts.

In order to study the evolution of the art of war one really must peep into the lives of outstanding Generals in history and see how they practised this art. In other words examine how the art of war has been executed through the ages. Thus alone can we understand its intricacies.

Let us study therefore some of the campaigns conducted by well known military figures in the past.

NAPOLÉON

Goethe said: "The story of Napoleon produces on me an impression like that produced by the revelation of Saint John the Divine. We all feel there must be something more in it. But we do not know what."

Napoleon was born on 15 August 1769. His father was a lawyer of Italian extraction living in the island of Corsica. He had 8 children of which Napoleon was one. Napoleon graduated from the military school at Paris in 1785. His final report described him as "Character mild; outstanding merit in Mathematics; would make an excellent sailor". At 16, he was posted to an artillery Regiment. One of his examiners predicted "will distinguish in the world, if favoured by fortune."

On 14 July 1789, when a French Duke brought to the King of France the news of the capture of Bastille, the King exclaimed, "why, that is a revolt?". "No Sir" said the Duke, "It is a revolution"! Liberty, equality and fraternity then became the order of the day and in its wake Napoleon had a phenomenal rise in life. A Brigadier General at the age of 25, he became Commander-in-Chief a year later and monarch of France before he was 30. This meteoric career has few parallels in history.

The vigour of Napoleon's mind, so conspicuous in conversation, was equally remarkable in writing. His mind had great logical accuracy and imagination. Had he chosen to, he would have distinguished himself in the field of literature or science as he did in Statecraft and soldiering. He

had that comprehensive genius which would have been pre-eminent in any pursuit to which he devoted the energies of his mind.

Napoleon Bonaparte was influenced a great deal by the theories of two outstanding and original military writers of the 18th century, Bourcet and Guilbert. From the former, he learnt the principle of calculated dispersion to induce the enemy to disperse their own concentration preparatory to the swift re-uniting of his own forces. Also, the value of a "plan with several branches" and of the potentialities inherent in the new distribution of an Army in self-contained divisions. And, from Guilbert he learnt how to extend forces without exposing them, to embrace the enemy without being disunited, to link up the moves or attacks to take the enemy in flank without exposing one's own. He also learnt from Guilbert the prescription for the rear attack as the means of upsetting the enemy's balance and concentrating mobile artillery to shatter a key point in the enemy's front. It was Guilbert's vision of a coming revolution in warfare, carried out by a man who would rise from a nation, that kindled Napoleon's imagination and ambition. Without his dynamic application, these principles might have remained a mere theory. Because his education coincided with his instincts and because these in turn were given scope by his circumstances, he was able to exploit the full possibilities of the new "divisional" system. In developing the wider range of strategic combinations lay Napoleon's chief contribution to strategy.

Dynamic rather than deep thinking, Napoleon did not evolve any clear philosophy of war. And his working theory, so far as it found expression in his writings, was rather a hotch-potch of ideas, lending itself to misrepresentation by subsequent generations of soldiers who have hung upon his words.

This tendency, as well as the natural effect of his early experience, is illustrated in one of the most significant and oft-quoted of his sayings, "The Principles of War are the same as those of a siege. Fire must be concentrated on one point, and as soon as the breach is made, the equilibrium is broken and the rest is nothing." Subsequent military theory has put the accent on the first clause instead of on the last: in particular, on the words 'one point' instead of on the word 'equilibrium'. The former is but a physical metaphor, whereas the latter expresses the actual psychological result which ensures 'that the rest is nothing'. His own emphasis can be traced in the strategic course of his campaigns.

The word 'point' has been the source of much confusion, and more controversy. One school argues that Napoleon meant that the concentrated blow must be aimed at the enemy's strongest point, on the ground that this, and this only, ensures decisive results. For if the enemy's main resistance be broken, its rupture will involve that of any lesser opposition. This argument ignores the factor of cost, and the fact that the victor may be too exhausted to exploit his success—so that even a weaker opponent may acquire a relatively higher resisting power than the original. The other school, better imbued with the idea of economy of force, but only in the limited sense of first costs, contends that the offensive should be aimed at the enemy's weakest point. But where a point is obviously weak, this is usually because it is remote from any vital artery or nerve centre, or because it is deliberately left weak to draw the assailant into a trap.

Here again, illumination comes from the actual campaign in which Bonaparte put this maxim into execution. It clearly suggests that what he really meant was not 'point', but 'joint'—and that at this stage of his career he was too firmly imbued with the idea of economy of force to waste his limited strength in battering at the enemy's strong point. A joint, however, is both vital and vulnerable.

It was at this time, too, that Bonaparte used another phrase that has subsequently been quoted to justify the most foolhardy concentrations of effort against the main armed forces of the enemy. 'Austria is our most determined enemy. . . . Austria overthrown, Spain and Italy fall of themselves. We must not disperse our attacks but concentrate them.' But the full text of the memorandum containing this phrase shows that he was arguing, not in support of the direct attack upon Austria, but for using the army on the frontier of Piedmont for an indirect approach to Austria. And in this secondary theatre, his aim—following Bourcet's guidance—was to knock out the junior partner, Piedmont, before dealing with the senior partner. In execution, his approach became still more indirect, and acquired a subtler form. For contact with reality shattered the dream which, after his initial success, he communicated to his government—'In less than a month I hope to be on the mountains of Tyrol, there to meet the army of the Rhine, and with it to carry the war into Bavaria.' It was through the frustration of this project that his real opportunity developed. By drawing Austria's forces into offensives against him in Italy, and defeating them there, he gained, twelve months later, an open road into Austria.

When Bonaparte assumed command of the 'Army of Italy,' in March 1796, its troops were spread out along the Genoese Riviera, while the allied Austrian and Piedmont forces held the mountain passes into the plains beyond. Bonaparte's plan was to make two converging thrusts across the mountains at the fortress of Ceva, and having gained this gateway into Piedmont, to frighten her government into a separate peace by the threat of his advance on Turin. He hoped that the Austrian forces would be still in their winter quarters—although if they should move to join their allies he had in mind a feint towards Acqui to make them withdraw in a divergent, north-easterly direction.

But in the event it was by fortune rather than design that Bonaparte gained the initial advantage of separating the two armies. The opportunity was created by an offensive move on the part of the Austrians—who made a bound forward to threaten Bonaparte's right flank and forestall any French advance on Genoa. Bonaparte countered this threat by a short-arm jab towards the joint of the Austrian advance—though two more jabs at a neighbouring point were needed before the Austrians accepted the repulse and fell back on Acqui. Meantime, the bulk of the French army was advancing on Ceva. Bonaparte's rash attempt, on the 16th of April, to take the position by direct assault was a failure. He then planned an encircling manoeuvre for the 18th and also changed his line of communications to a route further removed from possible Austrian interference. The Piedmontese, however, withdrew from the fortress before the new attack developed. In following them up, Bonaparte suffered another extensive repulse when he tried another direct assault, on a position where the Piedmontese had chosen to make a stand. But soon both their flanks were turned, and they were hustled back into the plains. In the eyes of the Piedmontese government, the threat to Turin from the oncoming French now loomed much larger than the Austrian's belated promise to march to their aid, by a necessarily round-about route. The "equilibrium" was broken, and its psychological effect dispensed with any need for physical defeat to make the Piedmontese appeal for an armistice—which removed them from the scales of the war.

No commander's first campaign could have been better suited to impress him with the vital importance of the time factor—all the more because it would seem that if the Piedmontese had held out even a few days longer Bonaparte might, for want of supplies, have been obliged to retreat back to the Riviera. Whether this reported admission of his

be true or not, the impression made on him is shown in his remark at the time—"it may be that in future I may lose a battle, but I shall never lose a minute."

He was now superior to the Austrians alone (35,000 to 25,000). Did he advance directly upon them? No. The day after the armistice with Piedmont had been settled, he took Milan as his objective; but Tortona to Piacenza was his indirect way thither—or, rather on to its rear. After deceiving the Austrians into a concentration at Valenza to oppose his expected northeastward advance, he marched east instead, along the South bank of the Po, and so, on reaching Piacenza, he had turned all the Austrians' possible lines of resistance.

To gain this advantage he had not scrupled to violate the neutrality of the Duchy of Parma, in whose territory Piacenza lay, calculating that he might find boats and a ferry to compensate for his lack of a proper bridging train. But this disregard for neutral rights had an ironically retributive effect. For when Bonaparte swung north against the Austrians' rear flank, the latter decided to retire without loss of time through an intervening strip of Venetian territory—thus saving themselves by following his example of disrespect for the rules of war. Before he could use the Adda as a river barrier across their line of retreat, the Austrians had slipped out of his reach, to gain the shelter of Mantua and the famous Quadrilateral of fortresses. In the face of these stubborn realities, Bonaparte's vision of invading Austria within a month became a distant vista. And increasingly distant, because the French Government growing anxious over the risk of the move and its own straitened resources, ordered him to march down to Leghorn, and 'evacuate' the four neutral states on the way—which meant, in the language of the time, to plunder their resources. In that process Italy was despoiled to such an extent that it never recovered its former state of prosperity.

From a military point of view, however, this restriction of Bonaparte's freedom of action proved the proverbial 'blessing in disguise.' For by compelling him to delay the pursuit of his dreams, it enabled him, with the enemy's assistance, to adjust his end to his means—until the balance of forces had turned far enough to bring his original plan within practicable reach.

The generals in the army were overawed by the genius and the magnanimity of their young commander. They fully appreciated his vast

superiority, and approached him with restraint and reverence. The common soldiers, however, loved him as a father, and went to him freely with the familiarity of children. In one of those terrific battles, when the result had been long in suspense, just as the searching glance of Napoleon had detected a fault in the movements of the enemy, of which he was upon the point of taking the most prompt advantage, a private soldier, covered with the dust and smoke of the battle, sprang from the ranks, and exclaimed "General, send a squadron there, and the victory is ours". "You rogue!" rejoined Napoleon, "Where did you get my secret?". In a few moments the Austrians were flying in dismay before the impetuous charges of the French cavalry. Immediately after the battle, Napoleon sent for the soldier who had displayed such military genius. But unfortunately he was found dead upon the field. A bullet had pierced his brain. Had he lived he would but have added another star to that brilliant galaxy with which the throne of Napoleon was embellished.

"Perhaps in that neglected spot is laid
A heart once pregnant with celestial fire,
Hands which the rod of empire might have swayed,
Or waked to ecstasy the living lyre."

The night after the battle of Bassano, the moon rose cloudless and brilliant over the sanguinary scene. Napoleon, who seldom exhibited any hilarity or even exhilaration of spirits in the hour of victory, rode, as was his custom, over the plain, covered with the bodies of the dying and the dead, and, silent and thoughtful, seemed lost in painful reverie.

So rich was Napoleon's life in remarkable achievements, incidents and victories that it is quite impossible to include them all within the scope of an article.

Napoleon's military career was studded with victories because he had a dynamic personality, possessed great courage and decisiveness, was an outstanding exponent of the art of war, was able to undergo supreme physical stress, enjoyed legendary reputation among those he commanded and was in fact a military genius. But when he made certain mistakes at Waterloo, he paid dearly for flouting the very principles of war which, when successfully pursued, had given him his string of victories in the past.

However, despite his defeat at Waterloo, in Napoleon France had given to the world a military genius who had won undying fame for his country and its army.

MOLTKE

Let us now study the military maxims of Moltke.

The supremacy that the Prussian army attained among the European armies by 1860 was made possible only by its organisation, by its peace-time training and by the theoretical study of war which was brought to perfection in the half century before Sedan.

The new Prussian strategy sprang from an original interpretation of Napoleon's art of war. To most 19th century students of war, Jomini's writings seemed the last word on Napoleonic strategy. Napoleon himself had said that this man from Switzerland had betrayed the inner-most secrets of his strategy but remarked that Jomini had set down only principles whereas genius worked according to intuition.

The new Prussian school of strategy created its own organisation in the Prussian General Staff which became the brains and nerve centre of the Army. The origin of the General Staff really goes back to about 1806 when Scharnhorst reorganised the Ministry of War and created a special division which was charged with the plans for organisation and mobilisation and with the peace-time training and education of the army. Under the jurisdiction of this section came also the preparation of military operations by intelligence and geographical studies and finally the preparation and direction of tactics and strategy. As a minister of war, Scharnhorst retained the direction of this section and exercised his strong influence on the tactical and strategic thought of the officers in it by training them in war games and staff manoeuvres. It became customary to assign these officers as adjutants to the various army units which went far to extend the control of the Chief of Staff over all generals. The young men with the purple striped trousers carried strategic thoughts into all sections of the army.

In 1821 the Chief of the General Staff was made highest adviser to the King in matters of warfare, while the Ministry of War was restricted to the political and administrative control of the army. This decision was of far-reaching consequences since it enabled the General Staff to take a leading hand in military affairs not merely after the outbreak of the war but also in its preparation and the initial phase.

Moltke was destined to take full advantage of the traditional ideas and institutions which were created during the wars of liberation. He

was not a Prussian by birth. His father was an officer of the King of Denmark who happened to be a German prince. Moltke was brought up as a Danish cadet becoming a Lieutenant in 1819. His experiences at school had been unhappy and his relations with his father not close; nor did service in the Danish army hold out great prospects. In 1822 he applied for a commission in the Prussian army in which his father had started his military career before transferring to the Danish Army. The Prussians put the young lieutenant through a staff examination and made him begin at the very bottom of the military ladder again. After a year, however, he was favoured by admission to the War College under Clausewitz. In 1826 Moltke returned to his regiment for two years but most of this time was given to theoretical work, such as teaching officers of his division. In 1828 he was assigned to the General Staff to which he belonged for more than 60 years.

With the exception of 5 years as a Lieutenant in the Danish and Prussian Armies, Moltke never served with troops. He had never commanded a company or any larger unit until the age of 65 when he took virtual command of the Prussian armies in the war against Austria. The years from 1835 to 1839 which he spent in Turkey as a military adviser to the sublime porte gave him some actual war experiences in the futile campaign against Mohamet Ali of Egypt. The Turkish commander threw the good advice of the young Captain (Moltke) to the winds and Moltke saw war at its worst among defeated troops.

When he returned to Berlin, he never had a penny to spend. Dire need dictated his writing short stories for a popular magazine or historical essays in order to purchase mounts without which he could not expect a commission on the General Staff. He translated six volumes of Gibbon's history only to discover that his publisher was insolvent. It is impressive to see how the young Moltke wrestled with such materialistic problems and yet acquired education in such a spartan setting. His chief work in his early years was concerned with topography but he went beyond into all the other aspects of geography and penetrated deep into history. His learning and education were remarkably well rounded and with them grew his power of expression. Moltke became one of the foremost writers of German prose. He was conscious of the natural inter-relation of generalship and statesmanship and took lively personal interest in politics. He abstained from active participation in political affairs and never questioned the powers that be.

In 1855 Frederick William IV made him aid-de-camp to his nephew Prince Frederick William, the future Emperor Frederick III. This appointment brought him into contact with the Prince's father known as the soldier Prince who apparently discovered in Moltke talents which seemed to recommend him for the position of the Chief of the General Staff. One of his first actions when in 1857 he became Regent of Prussia was to appoint Moltke to this post, as he was more interested in the political and technical reorganisation of the Army. The popular Landwehr (Territorials or National Guards) was curtailed in favour of a greatly expanded standing army. This gave the professional royalist officer corps unchallenged control over all military establishments of the nation. The Prussian Parliament fought this measure. This conflict was still raging when the Battle of Sadowa was fought. The Parliament's opposition however broke down when Moltke's victories fulfilled the longing for German national unity. Moltke's successful strategy therefore decided two issues: first, the rise of a unified Germany among and over the nations of Europe; second, the victory of the Prussian Crown over the liberal and democratic opposition in Germany through the maintenance of the authoritarian structure of the Prussian Army. Prior to 1866, Moltke was little known in the army. The supreme authority then used to be the minister of war, Roon. Even during the battle of Sadowa, when an officer brought an order from General Moltke to the commander of a division, the latter replied, "This order is all very well, but who is General Moltke?"

Soon after this Moltke's rise to prominence among the advisers of the King was supreme. His aloofness from the political scenes in the years 1857-66 allowed him to give his undivided attention to the preparation of future military operations. He overhauled the plans which the Prussian General Staff had drawn up and began to study rail-roads before a single line had been built in Germany. By these means troops could be transported six times as fast as the armies of Napoleon had marched and the fundamentals of all strategy—time and space—appeared in a new light.

In 1865 Moltke wrote, "The difficulties in mobility grow with the size of military units. One cannot transport more than one army corps on one road on the same day. It follows that the normal state of an army is its separation into corps and that the massing together of these corps without a very definite aim is a mistake. A continuous massing becomes, if merely on account of provisioning, embarrassing and often impossible. It makes a battle imperative and consequently should not take place for

the moment if such a decision has not arrived. The massed army can no longer march, it can only be moved over the fields. In order to march, the army has first to be broken up, which is dangerous, in the face of the enemy. Since, however, the concentration of all troops is absolutely necessary for battle, the essence of strategy consists in the organisation of separate marches, but so as to provide for concentration at the right moment." He also said, "An error in the original concentration of armies can hardly be corrected during the whole course of a campaign."

It is probable that Moltke already envisaged operations in which the concentration of the army would take place on the battle-field itself, thus discarding the Napoleonic principle that the army should be concentrated well before the start of a battle. Still, Moltke's direction of operations in the weeks before Sadowa did not disregard the Napoleonic rule from the very beginning. He could have drawn the armies together before the battle but decided later on to continue their separation and to achieve their union on the battle-field. After Sadowa, he summed up his ideas thus, "It is often better if the forces can be moved on the day of the battle from separate points against the battle-field itself. In other words, if the operations can be directed in such a manner that a last brief march from different directions leads to the front and into the flank of the enemy, then the strategy has achieved the best that it is possible to achieve and great results must follow. Great successes in war are not achieved, however, without great risks." Beyond this stage war becomes a combination of daring and calculation. After actual operations have begun, our will soon meets the independent will of the enemy. We can limit the enemy's will if we are ready and determined to take the initiative but we cannot break it by any other means than tactics, in other words through battle. The material and moral consequences of any larger encounter are, however, so far-reaching that through them a completely different situation is created, which then becomes the basis for new measures. The commander is compelled during the whole campaign to reach decisions on the basis of circumstances which cannot be predicted. All collective acts of war are therefore not executions of a premeditated plan but spontaneous actions directed by military tact. The problem is to grasp in innumerable special cases the actual situation which is covered by the mist of uncertainty, to appraise the facts correctly and to guess the unknown elements, to reach a decision quickly and then to carry it out forcefully and relentlessly. It is obvious that theoretical knowledge will not suffice and that here the qualities of mind and character come to a very practical and artistic

expression, schooled by military training and led by experiences from military history or from life itself.

Moltke denied that strategy was a science and that general principles could be established from which plans of operations could be logically derived. Each situation called for a definition in terms of its circumstances and for a solution in which training and knowledge were combined with vision and courage. In Moltke's opinion this was the chief lesson to be derived from history. He believed that no staff or army manoeuvres, indispensable as they were for training of staff officers, could put before their eyes as realistic a picture of the significant aspects of war as history was able to do.

The study of military history was made one of the central responsibilities of the Prussian General Staff and not left to a subordinate section. Moltke set a style by his classic monograph on the Italian War of 1859 first published in 1862, which aimed at an objective description of the events in order to draw from them valid practical conclusions. The histories of the wars of 1866 and 1870-71 were later written in a similar manner under his direction.

Moltke took the view that strategy could benefit greatly from history, provided it was studied with the right sense of perspective. His own practice exemplifies the benefits which he derived from historical study. He knew of course of Napoleon's use of detached corps for attacks against flanks or rear of the enemy. These operations with detailed units, however, had not affected Napoleon's general principles of strong concentration and his belief in the irresistible power of central attack. The advantages of such a strategy had been great in the age of Napoleon but they had not shielded him against ultimate defeat!

Important as history was for the officer, Moltke pointed out that it was not identical with strategy. Strategy is a system of ad hoc expedients; it is more than knowledge, it is the application of knowledge to practical life, the development of an original idea in accordance with the continual changing circumstances.

Moltke refrained from issuing any but the most essential orders. "An order shall contain everything that a commander cannot do himself, but nothing else."

One of the chief reasons why Napoleon kept his army close together was his wish to keep all troops within the reach of his direct orders.

Moltke's system of disposition in breadth made the central direction of the battle itself extremely difficult. He directed most movements in the war of 1866 from his office in Berlin and arrived on the theatre of war just four days before the Battle of Sadowa. He confined himself very wisely to general strategic orders. To ensure an adequate and free execution of strategic ideas, army commands were created with the authority in tactical questions resting with the commanders and corps and divisions.

Moltke's theories of war have won a permanent place in the annals of strategy.

ROMMEL

And finally, we come to the career of Rommel, a brilliant exponent of the art of war.

He was born in 1891. As a small boy he was docile but not afraid of anyone. The family had no military tradition nor any friends in military circles. But he joined the infantry in 1910 at the age of 19 as an officer cadet and was commissioned in 124th Infantry Regiment in 1912 as 2/Lt.

He was good at drill and got on well with his men. He neither smoked nor drank nor indulged in any after dark amusements. He was strong-willed and never tolerated anything slipshod.

From the moment he first came under fire, he stood out as incredibly brave. At 5 a.m. on 22nd August 1914, he went into action against the French in the village of Bleid. He had been under fire for over 24 hours when he had to go forward for reconnaissance in thick fog. Near the hedge surrounding a farm house, around a corner, he saw the enemy, about a platoon in strength, standing about on the road.

Should he go back and bring forward his platoon to engage the enemy or should he and his two scouts fire and take the enemy by surprise? The first decision in war is not easy to make. But he did what he was to do again and again later. He, along with his two comrades, fired at the enemy platoon, about 20 strong from the standing position. The enemy broke up and later Rommel's platoon cleared the village. By repeated display of gallantry, he won the Iron Cross Class I finally by crawling with his platoon through a gap in a belt of wire nearly 100 yards deep into the main French position, capturing several houses and beating off overwhelming enemy attacks in the process,

In 1917, before capturing the strongly fortified Rumanian position of Mount Cosua, he went without sleep for nearly a week and was severely wounded in the arm several days earlier by a bullet. In January of the same year, he lay in the enemy outpost line until 10 o'clock one night in a temperature which was 10 degrees below freezing point and then launched a surprise attack on the enemy and captured 400 of them, half asleep. He locked them up in the local church. His comrades used to say, "Where Rommel is, the front is." He seemed to have a sort of sixth sense and was a tactical genius.

He married at the age of 25. He was an instructor at the Infantry School for four years and commanded a Mountain Battalion at the age of 42. Two years later he went to Potsdam War Academy as Commandant.

The same year (1938) Hitler chose him as Commandant of the Battalion responsible for his personal safety.

In 1940, he took over the 7th Panzer Division which he commanded brilliantly in the blitzkrieg against France. He really made his name in North Africa where by dint of boldness and applying the principles of war intelligently he brought off some classic victories.

North Africa has always been a great battle ground in history. Rome and Carthage settled their scores for the Mediterranean Empire and Belisarius fought his most spectacular campaigns there. Alexander established himself in Egypt. Its importance lies in its control of the Mediterranean Sea.

In 1940, there were nearly half a million Italians in Libya and East Africa. The British had only 36,000 troops and one tank Division under Wavell in Egypt. Wavell ordered his troops to indulge in the strategy of exaggeration and make one man look twelve and one tank, a squadron. And despite this inferiority in numbers the British attacked a la Marshal Foch who once said, "My right is exposed, my left is heavily attacked, my centre is unable to hold, I cannot redistribute my forces. The situation is excellent. I will attack."

By 21 January 1941 Derna was in British hands and Benghazi had fallen by 6 February. Wavell's army of the Nile had advanced 500 miles in two months. He had beaten nine Italian Divisions by his three and had captured 130,000 prisoners and vast quantities of equipment.

The British stock was now sky-high. Relations between His Britannic Majesty's Ambassador and the Egyptian monarch almost verged on the

cordial—Cairo Society ceased to practice its Italian. Even the Cairo taxi drivers were approximately polite.

In the meantime, Rommel landed near Tripoli in Command of the Afrika Corps. Gradually, the British lost hold of the situation and their stock slumped as rapidly as it had arisen—and then, there was consternation in Cairo—Benghazi was evacuated; the 2nd British Armoured Division was destroyed; Generals O'Connor, Neame (V.C.) and Gambiar Parry were in the bag; the 9th Australian Division and the 3rd Indian Motor Brigade were over-run; Bardia and Sollum were lost; the enemy was back on the escarpment, and shortly after Wavell was relieved of his Command. Everywhere, everyone in Egypt whispered to each other, that the man responsible for all this was Rommel. He at once became a legendary figure both among his own troops and the enemy alike. He did not drink or smoke and like Napoleon could do with little sleep, and snatched, whenever possible, a few winks, sitting up completely refreshed. He did not care much for food and was content to stay off for a day in the desert with a packet of sandwiches or a tin of sardines. He insisted on being given the same rations as his men.

He was up by six in the mornings. A stickler for turn-out on parades, he left the Afrika Corps dress as they pleased in the desert. He never put on a steel helmet. He moved wearing a check scarf around his neck in winter and always wore his iron cross under his scarf.

He flew his own aircraft, though he had no flying license. He used to descend in back areas by surprise and once caught a colonel in bed after seven. He roared at the culprit, "You damned lazy fox. Are you waiting for me to bring you your breakfast!"

His visits to forward areas were very thorough. He had a keen eye for the country and minor tactics and never missed a machine-gun badly sited, transport in the wrong place, mines too obviously laid and uncamouflaged observation posts. Not infrequently did he draw enemy fire when he would drive out for a mile or so in no man's land to look at his own positions, from the enemy's point of view!

In battle he was at his best. He was a natural leader and instinctively relied upon his personal leadership. He was the first to identify desert war with war at sea and to realise that no admiral ever won a battle from a shore base. He was, therefore, always right up in battle, knew the latest situation and was able to reach quick decisions. In rapidity of decision

and velocity of movement, he outclassed all his adversaries. He was an artful and cunning fighter. His main contribution to tank tactics was his use of a screen of self-propelled anti-tank guns behind which his panzers advanced, withdrew or refuelled. Repeatedly British tanks were entrapped and led on to the guns in their attempt to close. Repeatedly with his own armour concentrated he caught the British dispersed.

His orders were often given verbally and were short and definite. He never had any doubts about what he wanted, and left none in the minds of his subordinates. He took great personal risks in battle. Again and again he was close to death or capture. Like Napoleon, he took risks because he had to and because he was convinced it was impossible for him to be killed in action. The key to his success lay in the encouragement he gave to his men which developed the will to win. His personal prestige was equally high in Germany and Africa. He was the Afrika Corps to his own men and foes alike. It was he who taught them never to admit that they were beaten. It was because they were the Afrika Corps, that even when they were taken prisoner, they marched down to the Docks at Suez with their heads high still whistling, "We march against England today." In Germany to this day they still carry their battle signs in their pocket books and proudly recollect their African escapades.

Let us see how Rommel conducted some operations in North Africa. In March 1941, he counter-attacked the British advanced dispositions and then by an encircling bluff enforced the surrender of their main body at Mechili. Within a week he had swept the British out of the whole of Cyrenaica save Tobruk and only by outstretching his supply lines was compelled to halt at the frontier.

In June the British, having received re-inforcements, attempted a fresh frontal offensive against the Libyan frontier. Rommel turned the tables by a well-judged armoured counter-stroke. In November the British mounted a bigger offensive. By this time Auchinleck replaced Wavell as C-in-C and the Eighth Army came into being under General Cunningham. But this time again they played into Rommel's hands by trying to smash his armour in head-on battles. And as the German tanks were superior in gun-power, though not in mobility, they applied defensive-offensive tactics which lured British tanks into traps. As a result, the British lost their numerical superiority as also the strategic advantage and Cunningham tried to break off the offensive. As this was repugnant to higher authorities, Cunningham was replaced by Richie.

At this juncture Rommel swooped round the 8th Army flank and tried to cut its L of C. He failed in this effort and in this process lost the whole of Cyrenaica. But as soon as the British became outstretched in their pursuit, Rommel struck back again.

For three months the front was stabilised on the Gazala position. In May 1942 Rommel moved first and by a wide flanking manoeuvre with his armour, threw the 8th Army off its balance.

General Richie had constructed a series of fortified posts known as Boxes from Gazala to 40 miles South—up to Bir Hachim. They were:—

In the North	1st South African Div
In the Centre	50th British Div
At Knightsbridge	The British Guards Bde
And at Brittachie	The Free French Force.

13 Corps was to hold the boxes and 30 Corps was to destroy enemy armour and protect 13 Corps' flank.

The Germans had 6 Italian Divs, 3 Armoured Divs, one motorised Div, and one light Div. The British had 3 inf Divs, 2 armd Divs, 3 inf Bdes, and one motor Bde. The Germans had 550 tanks as against the British 631. The British had air superiority.

Rommel concentrated his armour on 26 May without the British knowing of it until 27 May. He set out in 3 columns and by the 27th evening, despite RAF intervention, he reached the outskirts of Acroma—Sidi Razegh. Between 28-31 May fierce tank battles took place at Knightsbridge—(known as the "Cauldron"). Finally, on 1 June Rommel's striking force stood poised in the 2 lanes they had cleared in 50 Div locality. The 8th army counter-attacked in the Cauldron area but without success. Rommel now attacked and captured Bir Hachim. On 10 June the Free French withdrew and thus Rommel gained complete freedom of movement for his armoured forces. Forces engaged on this flank were released for the main battle and the threat to his L of C was removed.

After a series of tank battles in the Cauldron area, in which the British lost most of their tanks due to superior German anti-tank guns, Tobruk fell after the fall of Gambert, on 21 June.

The British had their forces in penny packets all over and had insufficient anti-tank guns. As each Box was surrounded, armour had to be sent

to its aid and was defeated in detail. Regrouping of the British armour and infantry took place too often. The morale of German troops was higher as they had advanced up to Gazala prior to this battle.

Despite air superiority, the British lost this battle as they had disregarded certain essential principles of war which Rommel observed, with determination, *e.g.*, surprise and mobility.

Rommel should have stopped at Tobruk. However, through political pressure, and through his own lust for gamble and success, he went beyond Tobruk and four days after the fall of this garrison he had reached Sidi Barrani and eventually stopped at El Alamein where the 8th Army held hard to their ground. Alexandria was now only 65 miles away but Rommel had only 12 tanks left. For his success in this battle he was promoted to the rank of Field-Marshal at the age of 49. He had risen from Lieut Colonel to the highest rank in the army in five years. That night he wrote to his wife, "Hitler has made me a Field-Marshal. I would rather he had given me one more division."

Soon, reinforcements arrived from England. Churchill wanted the British to take the offensive without delay, but Auchinleck, more wisely, insisted on waiting until the fresh troops had become tactically acclimatized to desert conditions. As a result, Auchinleck was replaced by Alexander as C-in-C and Montgomery took over the 8th Army.

Rommel struck again at the end of August but was foiled by the British defensive tactics and in the process the initiative changed hands.

After a long pause for thorough preparations—a longer pause than Auchinleck had contemplated—the 8th Army launched its offensive in the last week of October at El Alamein. It was backed up by a tremendous superiority in air, gun and tank power. And Rommel's forces, besides being overstrained, were crippled by heavy submarine sinkings of their oil-tankers in the Mediterranean and their consequent immobility.

Rommel had 40,000 Germans and 50,000 Italians and 500 tanks. The British had 110,000 men, 1,100 tanks, overwhelming artillery and complete air superiority.

Montgomery held a short front from Ruweisat to Alam el Halfa, a distance of 15 miles. The Germans, on the other hand, held a 35 mile front with insufficient troops.

At 2140 hrs on 21 October, supported by 1,000 guns, Montgomery advanced with 13 and 30 Corps simultaneously and occupied the Meiteiriya ridge by the 24th morning. Rommel launched a series of counter-attacks but without avail. On 30 October, 9th Australian Division attacked the coastal road but failed to reach the sea. On 2 November, the 2nd New Zealand Division established a new corridor near El Rehman but suffered heavy casualties. Rommel counter-attacked and a violent armoured battle occurred near Tel El Aqqaqir which the Germans captured on 2/3 November. On 3 November, the Germans were driven out of the Tel El Aqqaqir area and began their long trek to El Agheila. Rommel suffered 59,000 casualties and lost nearly all his tanks and 400 guns as against the British who lost 430 tanks and had 13,000 casualties. Montgomery's pursuit of Rommel was too cautious and his air did not maintain contact with the retreating enemy. Hence, Rommel got away lightly.

The reasons for Montgomery's success were his ability constantly to regroup his forces, the excellent concentration and location of his armour, the major surprise he sprung on the enemy by keeping the date and the direction of his attack a complete secret, and lastly the low morale of the Italians.

Rommel steadily withdrew past Tripoli and eventually in a vain but protracted attempt to arrest the Anglo-American advance from Morocco and Algeria, the Afrika Corps sang its swan song after a glorious struggle against overwhelming odds.

Rommel later became an Army Commander in Italy and in 1944 commanded an Army group. He was severely wounded as a result of being machine-gunned by an enemy aircraft whilst he was inspecting his front in a jeep.

When the Allies' offensive began to overwhelm the Germans on the Western front, he realised at once that continuation of war under the circumstances would only mean unnecessary slaughter of German manpower. He accordingly advised Hitler to sue for peace. His enemies misrepresented this to Hitler as a defeatist attitude. Steadily they mounted a "hate campaign" against him until they succeeded in having him murdered in cold blood.

Thus a pitiless destiny snatched away this great soldier.

The irony of fate was that two great Generals like Napoleon and Rommel had fallen a prey to political victimization.

CONCLUSION

The lives of great commanders, therefore, show that the qualities which distinguished them always remain the same. An outstanding General should be decisive, bold, energetic, popular and lucky. He should overcome numerical inferiority by the concentration of troops, through mobility, and hence rapidity of movement at the decisive place and time.; he should never give lengthy orders and must maintain high morale in his forces. He should be sound in administrative planning, improvising and utilisation of local resources. Finally, he must avoid arrogance in victory and dejection in adversity, for, in war, success and defeat follow closely on one another and make a continual ebb and flow.

Whether we study the battles fought by Caesar, or in recent times, we find that the importance of the fundamental principles of war such as the maintenance of the aim, offensive action, surprise, concentration, mobility, security, economy of force, morale and administration is the same today as it was ever before.

It is, therefore, necessary for all of us to study the careers of successful Generals in history and observe how they upheld all the principles of war and essentials of leadership. The pattern of war has fundamentally remained the same throughout the vicissitudes of history. Masters of the art of war have, however, been few and far between and appear only once in a blue moon in our midst.

AN ALL-ROUND BIG GAME RIFLE FOR INDIA

LIEUT. COLONEL D.K. PALIT, V.R. C.

FOR the past two generations, much controversy has raged over the question of the best all-purpose rifle for big-game shooting. The correspondence columns of journals such as "The Field", "Game and Gun", "Country Life" and others have at various times during the last fifty years discussed this question at great length without arriving at any satisfactory conclusion. The reason, in my opinion, is self-evident—there can be no such weapon as an ideal all-purpose rifle. The factors which control the type and bore of a rifle are many; different kinds of terrain—open, jungle or mountain; various types of big-game—dangerous or non-dangerous, thick or soft skinned, large or small; varying conditions under which one expects to shoot—from foot or machan, at night or during daylight, with or without gun-bearers. It would be impracticable to roll all these requirements, many of them contradictory, into one all-purpose rifle.

However, there is one consideration which makes a necessity of an all-round rifle, certainly amongst Service Officers in India. Those days are over when most of us could afford to maintain a battery of fire-arms to suit all the varying opportunities of sport that can be found in India. The price of new weapons (if one intends to get only the best type of English-made rifle, as indeed one should) has risen to astronomical figures; even second-hand weapons of good make are sold for prices higher than what they originally cost in pre-war days. The average young officer starting his career in the army today, if he is keen on shikar, can afford just one rifle, if it is to be a good one; this must serve him for all the various kinds of shooting he is likely to come across.

The purpose of this article is to help the young officer of today to select a good all-round weapon which will suit his pocket as well as his taste. I have seen a number of keen youngsters go in hastily for unsuitable weapons which they have later regretted. Some have ill-advisedly chosen weapons of cheap manufacture; or those for which cartridges are difficult to obtain; or those suitable for one type of shooting only. At the request of a number of such young friends, I have written these few pages as a general guide towards the selection of a good all-round rifle.

I have myself at some time or other fired, either on the range or at live game, all the rifles discussed in this article (except where otherwise mentioned). As regards ballistic data, trajectory tables, and many other technical details, I have borrowed largely from that classic book on sporting rifles, "Notes on Sporting Rifles" by Sir Gerald Burrard. The figures for "knock-out value" of various rifles have been taken from the book, "Big Game and Big Game Rifles" by John Taylor "Pondoro".

The first essential for the rifle which we are about to select should be that it must be suitable for the more common types of game—black buck, chinkara, wild boar and chital. Officers cannot often afford to go on organised shooting camps after big game such as tiger or bison; such shooting trips are a thing of the past, and the exception rather than the rule in this post-war era. The common sport of today is a week-end chase after black buck, chital or chinkara. At the same time, occasions do arise when armed with the same rifle, one may have to face tiger, sambhar or bison. One's rifle must therefore be able to cope with such contingencies also. But the point that I am trying to establish is that our all-round rifle should be a "medium game" weapon also capable of taking on big game; rather than a big game rifle which can also be used for medium game shikar. The greater use of the weapon must decide its essential character.

The first point in choosing any rifle is whether one should go in for a double or a single. There are a hundred-and-one reasons why the double is an immeasurably superior weapon, especially for those who have always used one. But there is the one irrefutable argument which inexorably precludes its inclusion in the average I.C.O.'s battery—its prohibitive cost. A new double built to order by a good English firm today can cost up to Rs. 10,000/- (including customs duty). The cheapest models cost more than Rs. 5,000/-. Even a reliable second-hand weapon is unobtainable at less than about Rs. 2,000/-; whereas a good second-hand single-barrel (or magazine) rifle built by the best firms can be purchased for between Rs. 600/- to Rs. 1,200/-, depending upon its condition. Let us therefore assume that our weapon is to be a magazine rifle.

Before we proceed any further, I must mention that one cannot over-emphasise the importance of owning a good rifle built by a reliable firm. They are a little more expensive than cheaper makes, but certainly worth many times the extra expenditure. For those who are new to the game, it might be useful to include a list of such rifle-makers. Amongst English firms, the following are the best known makers of the more popular bores :

Holland and Holland; Westley Richards; John Rigby; Jeffery; William Evans; Cogswell and Harrison; Alexander Martin (Scottish); and Charles Lancaster. Undoubtedly, there are other good makers, such as B.S.A. and Greener, but they are (in my opinion) of slightly inferior grade. Of European Rifle-makers, I can recommend the Mannlicher-Schonauer as the only good reliable makers of whom I have personal knowledge. I do not consider the Mauser, and particularly their cartridges, as extremely reliable—but perhaps that is only a prejudice based upon personal experience. As far as American rifles are concerned, they are much inferior to anything the best British firms can produce, and (after de-valuation) cost almost as much.

As regards conditions of shooting, India offers three main types of shooting: mountain or "cross-canyon" shooting; jungle shikar; and "bush" country shooting. Mountain shooting in the Himalayas, where very long-range weapons are necessary, is becoming less and less popular not only because of the heavy expense of such shooting trips, but also because very few can afford the time today. A well organised shoot after ibex or markhor will take anything up to six or eight weeks of trekking in the mountains. Jungle shooting, where a heavier bore is often sought after at the loss of range, used to be the commonest type of shooting in India. This also, however, requires quite a heavy financial outlay and is not as popular amongst service officers as the "bush" type of shooting after medium or small game. As regards open country shooting such as one finds in Africa, where even the larger species of animals, like lion or buffalo, are often shot at ranges of 300 yards or more, this is seldom met with in India. Big game is confined to close-country or jungle; in the "bush" or in open country, we pursue mostly smaller game—and even so, the countryside is such that we seldom shoot at very long ranges.

Now, coming down to the selection of a suitable rifle, let us see what the various attributes of a rifle are which make it suitable or unsuitable for any particular type of shooting. In my opinion there are five main characteristics which must be studied in any one type or model of rifle. They are: bore; bullet-weight (of cartridge); muzzle-velocity; "knock-out" value, and flight of bullet, or trajectory. A combination of these attributes, some of which can be at variance with each other, makes for a rifle's suitability for any given type of shooting.

Bores can conveniently be classed into three main categories: large, *i.e.* over .400 bore; medium, *i.e.* between .300 and .400 bore; and small.

Bullet-weight of cartridge can also be classed into three— heavy, medium and small. Here again 400 grains and above are considered heavy; 250-400 grains as medium; and below 250 as light.

So far this is common knowledge. What is not so universally recognised however is the relationship between muzzle-velocity and “knock-out” value. Beginners, and in the services we are all mostly “beginners” as far as big game shooting goes, are too often apt to associate “knock-out value” or “killing-power” only with largeness of bore or heaviness of bullet. In general this may sound obvious: but there is one other factor which also makes for “knock-out value”, especially in the medium bores.

Muzzle-velocity, it has been proved by practical experience, has a great effect on “knock-out value” (which is a better term than “killing-power” as will be explained later). When the actual striking velocity of a bullet (i.e., its velocity at the time of impact) exceeds a certain speed—which is reckoned to be about 2,400 feet per second—there is a big forward jump in the shock effect on the animal. This phenomenon can only be explained in terms of effect on the tissues. Being hit by a bullet at this “Magnum” velocity seems to have a paralysing effect on big game.

It was for this reason mainly that “magnum” rifles became so popular— (i.e. rifles with a muzzle-velocity of 2,500 f.p.s. or more). The Westley Richards .318 “Accelerated Express”, the Holland and Holland .375 “Magnum”, the .350 or .300 “Magnum”, are all rifles with high enough muzzle velocity to achieve this shock effect on animals at normal shooting ranges.

Based on these above considerations, John Taylor, in his book, “Big Game and Big Game Rifles”, has worked out a “knock-out value” factor for each type of rifle and cartridge. “Knock-out value” is an arbitrary calculation, designed not to indicate “killing power” so much as the shock-power, i.e. the ability to “anchor” the game long enough for an aimed second shot in case the first has not hit a vital organ. It is a figure for comparison only, and has been calculated as much from the vast experience of the author of this excellent book as from any calculation of muzzle-velocity, bore or bullet weight.

As a basis for comparison, it might be useful to know that Mr. Taylor places the .303 Mark VI 215 grain bullet (m.v. 2,240 f.p.s.) at a “Knock-out value” (KOV) of only 19.2, as compared to a KOV of 49 for a .450/.400; or 40 for a .375 Magnum (300 grain bullet); or 28 for a .318 Westley

Richards. An estimated requirement of minimum "knock-out value" for dangerous soft-skinned big game in India is about 35. This of course does not mean that a .303 will not kill a tiger. I have myself, while on a shoot in Orissa during the war years, when I had no other weapon available, shot a rogue elephant and two tigers with a 174 grain army .303 (KOV about 15). A friend of mine in the 3rd Gorkhas, Major V.G. Das, shot a rogue elephant last winter (also in Orissa) with a .256 "magnum" rifle firing a 145 grain bullet (KOV about 14). Mr. W.D.M. Bell, perhaps the most famous African hunter of all time, seldom used a rifle heavier than his .275—and I suppose he must have shot over 1,000 elephants with this rifle.

However, for the beginner or even the casual shikari, it is only wise to assume that below a KOV of 30 one should not attempt dangerous big game (tiger, bison or elephant). In other words, if one is unsure of ones ability to "place the bullet" on a moving target at, say, 100 yards range, then one should not venture out with anything much less than a 30 KOV rifle.

The last factor, flight of the bullet or trajectory, is important only at longer ranges, i.e. over 200 yards. Certain types of cartridges show a considerable drop in flight after 200 yards—e.g., a .450/400 3-inch cartridge shows a bullet-drop of 19 inches between 200 and 300 yards; a .375 Mannlicher 20 inches; a .303 Mark VI 22 inches. But a .375 Magnum (270 grain bullet) drops only 12 inches; a .318 Accelerated Express (180 grains) 11½ inches; a .280 Ross 8 inches. Since the average sportsman trains himself to "aim over" (rather than put up the sights) to increase his range of shot, it will be seen that the "high trajectory" rifles would be most unsuitable for long range shooting. A .577 3-inch cartridge loses 11½ inches even between 100 and 200 yards; a .375 flanged drops 10 inches over these same distances. It does not need emphasising that it is common even in jungle shooting to switch back and forth from 100 to 200 yards. I once lost a tiger because I forgot the bullet-drop of my .450 (480 grain) double Rigby. I had been firing at Sambhar and bear from a machan—this was during a mixed beat at Shivpuri, Gwalior—at ranges between 50 and 100 yards, when I spotted a tiger, sneaking through the line of stops, at a range of about 220 yards (I paced this out later). It was an easy shot, and I carefully "aimed over" about six inches above a heart-shot before I pulled the trigger. The bullet passed him low and I saw it hit the dust about 100 yards further on. I had overlooked the fact that my 480 grain bullet dropped nearly 14 inches between 100 and 225 yards (as worked

out by the trajectory chart supplied by Rigby). A Magnum rifle bullet would not have lost more than 5 inches at that distance.

Let us first take the heavier rifles. Those who intend to go after the dangerous type of big game more often than smaller animals would be well advised to consider a good "medium-heavy". Amongst magazine rifles the .416 Rigby which fires a .410 grain bullet (KOV-57); the .414 or .400 (3-inch Jeffery), which fires 400 grains (KOV 45) but at a lower velocity, are both recommended. If one can afford a double, there is a wide range of .450/.400's in the market, and almost all good rifle-makers have built this popular bore. The .450/.400 fires a 400 grain bullet and rates on KOV of 49. As I have said before, I am unable to recommend the .423 Mauser, though it is cheap and certainly accurate. In spite of its largeness of bore however it fires only a 347 grain bullet, at 2,200 f.p.s. and rates a KOV of 46.

These rifles however are not all-round rifles by any means and suitable only for large game at short ranges. Besides, they are expensive in cartridges. (A .450/400 cartridge, for instance, costs 3/4/- each as compared to a .318 cartridge for 1/6 or 1/10, depending on its grainage). Owning one of these large-bore rifles means missing half the fun of the smaller week-end type of chase, because not many of us can afford to pop off 3/4/- a time at black buck or chinkara, or to do occasional target practice. Then again, the flight of bullet falls too steeply after 150 yards for them to be of much use in open or bush shooting. Even the .416 Rigby, with the highest muzzle-velocity of its class (2,350 f.p.s.), falls 11 inches between 150 and 250 yards and 15 inches between 200 and 300. A .450/.400 falls nearly 20 inches between 200 and 300 yards. If one intends to spend much time after game in open or bush country, a heavy or medium-heavy would most certainly have to be discarded.

Let us take the bottom end of our list next—the small bore rifles. These are excellent for long range shooting at medium or small game, but definitely risky when shooting at tiger or bison except in the hands of the most experienced of sportsmen. A .280 Ross, .275 Rigby or .257 Roberts may have a flat trajectory (dropping only 8 or 9 inches between 200 and 300 yards, and only 2 or 3 inches between 100 and 200 yards), but its "knock-out value" is negligible. A .280 or .257 rates a KOV of less than 15, and one would have to hit a tiger in a vital organ to ensure an eventual kill and even then it might do considerable damage to beaters or shikaris before finally dropping dead. These small-bore magnums are

incomparable when chasing ibex or black buck, shooting at ranges up to 300 yards or more, but my advice to the casual shikari is to leave dangerous big game alone if all he has with him is one of these rifles. As an "all-round" rifle, the small bore qualifies to a lesser degree than even the medium-heavy.

Finally we come to the last category from which we can choose our "all-rounder"—the Medium Magnums. There are four well-known ones in this category of which I have personal experience—the .375 Magnum introduced by Holland and Holland, the .333 by Jeffery, the .318 Accelerated Express by Westley Richards, and Holland's famous Super Thirty, the .375/.300 Magnum. Since the "all-rounder" for which we are looking eventually come out of this lot, it might be profitable for us to look at some of these in a little more detail.

I suppose that of all rifles ever made none is more versatile than the .375 Magnum, (now made by virtually all rifle makers—even some American ones). It is built to fire three bullet-weights—235, 270 and 300 grains. The first serves the purpose of a flat trajectory small-bore—the bullet has a muzzle-velocity of 2,800 and drops only 10 inches between 200 and 300 yards, a mere five inches between 150 and 250. The last, the 300 grains, takes the place of the medium heavy. It has a muzzle-velocity of 2,500 and a "knock-out value" of over 40. I have shot on the range with a Holland's .375 Magnum magazine rifle, fitted with a telescopic sight, and found it to be extremely accurate at all ranges up to 300 yards, the bullet-drop conforming exactly to the trajectory chart supplied by the makers.

The .333 made by Jeffery fires two bullet-weights, a 250 grain and a 300. Only the former is a Magnum, its muzzle-velocity being 2,500 f.p.s.; that of the 300 grain is only 2,200 f.p.s. The 250 grain bullet does not have as flat a trajectory as the Holland's 235 grain, losing about 13 inches between 200 and 300 yards. The 300 grain cartridge has a KOV of 31. This rifle however, (like most of Jeffery's weapons) is built heavy, weighing about 8-8½ lbs (which for a magazine rifle is quite a weight, especially if one has to carry it for long distances).

Next we come to the .318 Accelerated Express by Westley Richards. This excellent weapon is also used with two different bullet weights—the 180 and the 250 grains. The lighter bullet has a trajectory similar to the Holland's .375 Magnum 270 grain bullet, (losing about 11½ inches between 200 and 300 yards) and has a muzzle-velocity of 2,700. The heavier bullet

has a muzzle velocity of 2,400 f.p.s., a KOV of 28 and a trajectory considerably more flat than that of the 300 grain.333 bullet at the longer ranges. In fact, from many points of view the .318 is perhaps the best weapon for all ranges between 50 and 300 yards, and for all types of game. I have used one for many years now, and have found it the handiest weapon of any I have ever handled. The KOV of the 300 grain is definitely weak for dangerous big game, but still well within the "possible" range for a reasonably confident shot. His Highness of Bharatpur has a whole battery of these weapons, double and single, and has shot most of his tigers with his .318s. Many African hunters have shot elephant and buffalo with the solid 250 grain bullet. It might be useful to compare this rifle with a popular non-magnum medium—say, for example, the .375 Mannlicher. The Mannlicher .375 fires a 270 grain bullet at 2,250 f.p.s., rating a KOV of 32, but its great disadvantage is its bullet-drop—20 inches between 200 and 300 yards.

The lightest of the medium magnums is Holland's (.375/.300) Super Thirty a magnificent and extremely accurate weapon, though a shade too light for dangerous or thick-skinned game. It also fires two bullet-weights—the 180 and the 150 grain. The KOV of the heavier cartridge is a little over 20, and therefore somewhat low for our "all-rounder". The 150 grain bullet has a trajectory about similar to the Holland's 235 grain .375 Magnum bullet.

After studying all these ballistic details, it is obvious that our all-purpose rifle must come from the list of magnum-mediums. As I have stated, the .375 Holland's is undoubtedly the most versatile, but has one minor and one major draw-back. The magazine rifle is on the heavy side—weighing all of 8½ lbs. Secondly, the cartridges are expensive, costing about 3/- each. For the Sunday chase after black buck—I am sorry to keep harping on the poor old black buck; but today this is perhaps the most popular of all sport, certainly in Northern India—a 3/- cartridge is definitely a disadvantage. Also, carrying one's own rifle for miles and miles is sometimes a necessity, and every ounce counts. The .318 in my opinion is the best solution to our problem. It is a light rifle; it has been built as light as 7 lbs, the heaviest being 8 lbs. It is cheaper, both in the second-hand market and new, than the .375 Magnum. It is a good long-range weapon with a reasonably flat trajectory; and has a fairly high KOV, though not really within the "safety bracket" for a beginner (at dangerous big-game shooting). The cartridges cost only

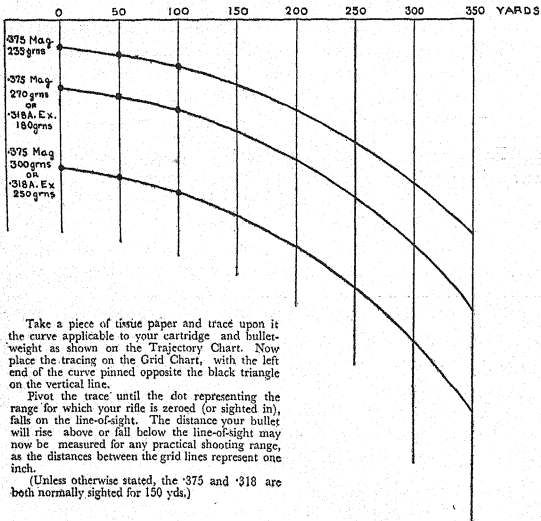
1/6 to 1/10 each, and therefore one can afford to indulge in occasional target practice to keep one's hand in. It is readily available in the market. It is eminently suitable for our old friend the black buck (or for pig and chinkara) as well as for all types of non-dangerous big game such as sambhar, nilgai, chital—at all ranges up to 300 yards. Thus, it conforms to our requirement, as defined in the beginning, that it should be essentially a medium-game weapon, but also suitable for taking on occasional big game.

The final selection must of course be made to suit the taste and the pocket of the individual. The .375 is undoubtedly a better all-rounder with its 3 bullet-weights, though expensive in cartridges. The .318 is the best weapon available amongst lighter and cheaper magnums which fire an inexpensive cartridge, its only drawback being that its KOV is just a shade too low for beginners at dangerous big-game shooting.

For comparison and range calculations I have included an approximate trajectory chart* for the following three cartridges—the .375 Magnum 235 grain bullet; the .375 Magnum 270 grain bullet, which is almost the same as the .318 180 grain; and the .375 Magnum 300 grain, which is (for all practical purposes) identical with the .318 250 grain. The trajectory graph when copied and superimposed on the second chart will give all the necessary information regarding bullet-drop at various ranges. It should be borne in mind that these magnum rifles are probably zeroed for a range of 150 yards—that is, the line of sight crosses the flight of the bullet at 150 yards range.

* Taken from the "Hunting Yearbook" published in the U.S.A., and worked out from data given in "Notes on Sporting Rifles," by Sir Gerald Burrard.

TRAJECTORY CHART



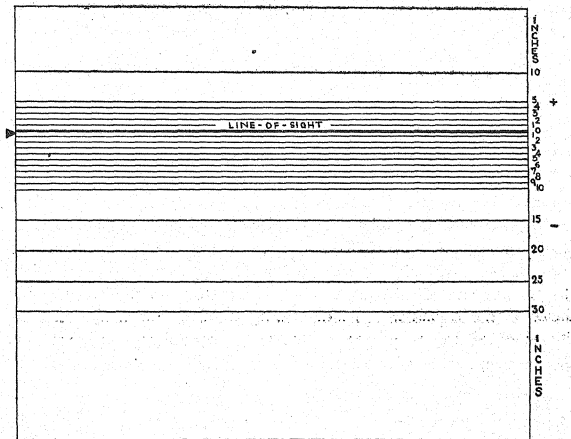
Take a piece of tissue paper and trace upon it the curve applicable to your cartridge and bullet-weight as shown on the Trajectory Chart. Now place the tracing on the Grid Chart, with the left end of the curve pinned opposite the black triangle on the vertical line.

Pivot the trace until the dot representing the range for which your rifle is zeroed (or sighted in), falls on the line-of-sight. The distance your bullet will rise above or fall below the line-of-sight may now be measured for any practical shooting range, as the distances between the grid lines represent one inch.

(Unless otherwise stated, the .375 and .318 are both normally sighted for 150 yds.)

389-B.

GRID CHART



NIGHT OPERATIONS

MAJOR V.P. NAIB

THE progress of civilisation is a record of man's struggle with nature either to control the forces of nature for his needs or to protect himself from the adverse effects of those forces. The tendency of the civilised man is, therefore, to draw away from nature rather than adapt himself to nature and live in harmony with it. This attitude of the civilised man towards life and nature has been largely responsible for his aversion to darkness, fog and the extremes of weather, particularly the seasonal severities in certain climes.

HISTORICAL BACKGROUND

During the great campaigns of Marlborough and Napoleon, by an unwritten law, both the opposing armies suspended serious warfare during winter. In like manner, the battles were largely fought during the hours of daylight, though occasional tactical moves during the nights were not uncommon. This state of affairs continued till world War I although the Boer and other colonial wars against less civilised peoples brought out the importance and effectiveness of night operations. Another contributing factor to the suspension of fighting during the night was the fact that the fire power of modern weapons, with their longer range and need for observation, lost their full effectiveness and flexibility during darkness.

World War I proved the increasingly important role of night operations in modern warfare. The Russians were the first who exploited the possibilities of night operations on a large scale in World War I, but only the Germans benefited by this experience as there was no co-ordination between the Allied and the Russian Revolutionary armies. This was again a case of a less civilised or poorly equipped nation fighting against an enemy equipped with superior weapons and better organised. The only way in which enemy superiority in weapons and fire power and, quite often, adverse terrain can be overcome is by night operations. The Mahrattas were adepts at night operations and their success against the vastly superior Moghul armies was due to their training and reliance on night operations. History repeated itself during World War II. The vigorous emphasis on night

operations during World War II was due to the early recognition of this need for neutralisation of superior enemy fire power and technique by operating during the night. The Allies during the initial stages and the Russians throughout the War demonstrated the effectiveness of night operations in the face of enemy superiority in fire power on the ground and particularly in the air. Similarly, during the final stages of the War the Germans had to rely on night and fog as their allies, when confronted with the Allied supremacy in the Air.

More recently the Korean War has given the Western Nations a very rude jolt and has considerably shaken their complacent confidence in their technical and fire-power capabilities. For the first time the Western Powers had to face the mass attacks of the Communist hordes delivered during the hours of darkness and, quite often, in inclement weather. These attacks were always pressed home without regard to casualties and, in the majority of cases, they were successful. This new threat to the fire supremacy of the Western Powers, and particularly America, has set them thinking about the means of restoring this fire supremacy during darkness in order to meet the numerically superior horde armies of Russia and China. True to their genius for technical and scientific developments to solve their problems, the Western Powers are focussing their attention increasingly on solving the problem of night vision scientifically. Considerable research and experimentation are being carried out in the use of radar, infra red rays and other methods of battle-field illumination by artificial light.

SCOPE OF NIGHT OPERATIONS

Operations at night include both action and movement. There is a tendency in some quarters to restrict the scope of night operations to attacks with limited objectives. The scope of night operations is very much larger. A resourceful and daring commander will not only attack during the night but also exploit his success by movement during night in order to gain operational advantages. This is particularly important when operating against a night-shy enemy. At present we have become night-shy partly due to lack of experience and mainly due to the absence of a proper emphasis on night training. Our night exercises usually appear to terminate with the reorganisation on a limited objective. In regard to the use of armour during darkness, even a remote suggestion is apt to draw loud protests. While the anti-tank gun has apparently compelled the tank to do long range sparring at the expense of its mobility, there is a reluctance to resuscitate its mobility even during darkness when its chief enemy is

blind and immobile. Grim indeed are the prospects for the effective use of tanks in the face of such inertia !

A successful attack delivered during the day or night can only be exploited by ruthless movement both during the day and night, particularly the latter. According to General Manteufel, the German Panzers in Russia went a step further by breaking through the Russian Lines during the night and successfully supporting an attack next morning from the rear of the enemy. The demoralising effect of such an action can easily be imagined. Long night marches through enemy held territory both by German infantry and armour were quite normal during the Russian campaign. Some of the German commanders were agreeably surprised when the Allied Armies in Normandy did not make use of the night for the break-out and pursuit. If the Allies had ruthlessly pressed home their success by movement during the night, it is the considered opinion of many German Generals, that the stalemate on the Rhine could have been avoided and the War could have been terminated much earlier.

THE PROBLEM OF NIGHT VISION

The problem of night vision has two aspects—the physical and the psychological. The physical aspect relates to visibility or lack of it. As a consequence of this, night affects the imagination as well as the nerves. The tendency is to imagine dangers which do not exist and this effect on the imagination is heightened or emphasised by the exaggerated reaction of the strained senses. Even well disciplined troops are affected by the influences just described. This explains why the civilised man in particular living in the cities away from nature dreads the night. It also explains why less civilised people or those living close to nature, are not afraid of darkness. The reliance on artificial aids to solve the problem of night vision is, in a sense, a confession of failure on the part of civilised man. At night and in forests, scientific and technical gadgets lose some of their glamour and the complete scientific solution to the problem of night vision is not likely to be achieved in the near future. These facts are of tremendous significance to the soldier, who is required to fight in future wars, and more particularly to the Indian soldier, who has to rely more on his individual skill and toughness than technical aids for the simple reason that these aids may not be readily available to him. We, in India, must therefore solve the problem of night vision by night adaptation and intensive training in night operations. Technical aids like infra red rays and artificial illumination are at present only of theoretical interest to us. It should also be

remembered that these technical aids, particularly artificial illumination, are apt to have an adverse effect on the natural night adaptation of a soldier trained to rely on such aids. It is common knowledge amongst soldiers with any experience of night operations, that even a temporary and limited use of ordinary torch light adversely affected the troops and it was sometime before they could regain their night vision and continue movement. That is one of the main reasons why colour filters were used to cover torches, tail lights and other means of limited illumination. In this article operations in moonlight, and particularly in full moon, are not considered because of the risk of losing the element of surprise. In any case, troops trained to operate during complete darkness can certainly take full advantage of moonlight whenever it is available.

TECHNIQUE

Only well disciplined troops properly trained in the technique of night operations are suitable for the successful conduct of daring and far reaching night operations. These operations require a very high degree of integration between the components of the force undertaking them. In this article, the technique of night operations is considered under two heads—Night Actions and Night Movement.

Night Actions

Planning and Requirements

Before a night attack could be launched there are certain prerequisites which must be fulfilled. First of all, previous contact should have been established. During this contact, by means of intensive reconnaissance, the location of enemy defences must be determined. This is followed by a detailed plan of action which should lay down clearly amongst other things, the routes of approach, the forming up place and the start line, the direction or axis of attack, the plan including defensive fire tasks and the bringing up of weapons and stores for reorganisation. When planning it must be remembered that the "Night Operation" is not entirely tactical. The commander must ensure that the plan "caters for those minor administrative problems so simple by day and so chaotic in the dark."

In the attack as well as defence the success of night action is based above all on the element of surprise. Loss of surprise will mean that an attack is stopped too soon or its tempo is reduced. Therefore, intensive preparation and secrecy are the keynotes to success. This includes the movement of troops before they reach the start line. The movement of

[vehicles, particularly tracked vehicles, must have noise cover as well. Once the assaulting troops leave their start line the maintenance of direction is their main problem. This is solved by making the plan of attack simple and selecting the start line square to the objective. Any change of direction during a night attack is apt to be very dangerous because, as it has happened on certain occasions, the assaulting columns may never reach the objective and land up in quite a different place! For that very reason the objective selected must be definite, distinct and visible. Otherwise it will have to be indicated by tracer or airbursts or other means. This will, of course, mean loss of surprise. Selection of a definite objective and fixing up of a unidirectional axis will also solve the difficult problem of co-ordination between the assaulting columns, even though the troops will be marching in close order.

Fire Support and Aids

The use of tracer from anti-aircraft artillery and the indication of the objective by means of air-bursts or other means no doubt facilitate direction keeping but the advisability of using such aids should be weighed against the consequent loss of surprise. Similarly, in regard to the fire support for a night attack, the commander must decide whether he should launch a silent attack and achieve surprise, or whether he should put in a noisy attack with artillery support and sacrifice surprise. The best course is to aim at achieving surprise by a silent attack with the fire support programme on call. The important point to remember about the fire plan is thorough preparation and detailed briefing of the unit and sub-unit commanders. This briefing should enable the sub-unit commanders and, particularly, the F00s to orient and map spot themselves during the hours of darkness. By means of a reference round of air-burst, and sometimes, even without it, they should be able to bring down artillery fire on previously registered targets. This cannot be done unless the officers have been trained in the location and engagement of targets at night.

Execution

When all the conditions mentioned above have been fulfilled, success will depend upon the rapid and energetic execution of the plan. Once the attacking units leave the start line, the movement of our attacking columns must be silent and continuous until the objective is reached. There is no question of having intermediate objectives and fresh start lines. The advance must continue without halt because any delay en route may easily result in loss of surprise and failure. Co-ordination between different

sub-units is very difficult during night attacks. Until contact is made, there will be very little occasion for the assaulting troops to use their personal weapons. Even after contact, hand to hand fighting and the technique of close combat will be the "order of the night". Fire discipline must be very strict and troops should not fire except at point-blank range. This ensures surprise, prevents indiscriminate firing and possible casualties to our own troops. In the event of a unit or sub-unit reaching the objective ahead of others and losing contact with its flanking units, it should automatically start reorganising itself for all-round defence.

Armour in the Night Attack

The use of armour on a very dark night is normally limited to its participation in the fire plan and reorganisation phases. Engagements of targets by tanks at night will be exceptional. When they do occur the targets will be normally on the flanks of the objective and the tanks will have to be suitably deployed much earlier and carry out their registration. But the importance of tanks being ready to move up during the night immediately on capture of the objective should not be underestimated. The demoralising effect of finding tanks on the objective when the enemy puts in a counter-attack supported by his own tanks the next morning will be considerable. This will also facilitate rapid exploitation of success either during the same night when suitable routes of advance are available or immediately after first light.

If tanks are expected to assault during a night attack they must do it in co-operation with infantry in suitable terrain. For such attacks it is best to choose either a light night, that is, a moonlit night, or arrangements must be made for artificial fighting light by means of search-lights or parachute flare bombs. Direction keeping is facilitated by ordering the tanks to march on to the bursting shells over the objective. The attack should be on a narrow front with tanks moving in close formation. A squadron of tanks should not cover more than 500 yards. The simplest formation, that is, line or line ahead, must be adopted. In line the tanks march by the centre where the commander of the sub-unit should be. "Attacks by tanks at night should be rehearsed in order that every commander and driver shall be quite clear as to how far they ought to go, their direction of advance and what action they are to take in the event of various forms of enemy retaliation". Only thus can the commander achieve cohesion and control, without which there is no probability of success.

Night Movement.

Some aspects of night movement before a night attack have already been considered. The tactical movement of units and formations as a preliminary to night or day operations does not present any problems, though the need for training in night marches along roads and night traffic discipline should be borne in mind by commanders at all levels. The conduct of these moves is, however, a matter of routine and so well known that there is no need to make any special reference to them in this article.

Movement through enemy held territory by operational night marches, particularly by armour, has tremendous possibilities. As already indicated, the Germans carried out such moves against the Russians in the last war with success. Such moves should be attempted after the obstacle belts have been breached and the main enemy defences have been broken into. The effect of an armoured break-through in strength continuously during day and night will spread consternation and demoralisation amongst the defenders in addition to preventing the movement of their reserves and the disruption of their communications. According to General Bluementritt, who has had considerable experience of such operations, "the armoured break-through in strength does not mean the night march of entire armoured divisions because the length of such a force even when split up into two columns along parallel routes, would be prohibitive both in time and space. In any case the bulk of armour hardly ever gets a chance to drive and the result is senseless fatigue". He, therefore, recommends that the advance must take place in three or four columns of compact combat teams. Where the paucity of roads makes this impracticable, General Bluementritt recommends that only advance detachments should be pushed forward. The division itself can start smooth driving at dawn.

Various aids for keeping direction and cohesion during night marches have been devised and practised. The visual aids include pin-point tail lights with different coloured masks to indicate sub-units and commanders, Very lights and similar others. But the most ingenious and effective and, at the same time simple, aid was the use by the Germans of bicycle reconnaissance at the head of motorised troops. The need for reconnaissance is universal in all operations. This need is particularly important in night marches because of road blocks, demolished bridges, and enemy anti-tank fire. The advantages of bicycle reconnaissance for operational night marches are therefore obvious. Speed is no problem

because bicycles can move at night as fast as motorised troops, if not faster. The movement of the latter without lights is bound to be slow and interrupted by occasional stops. On the other hand, bicycle reconnaissance is almost noiseless, the riders can dismount and take action quickly, and what is more important, they can see and hear better than motor cyclists and personnel in tanks or motor vehicles. General Bluementritt further recommends that these bicycle reconnaissance troops should be hand-picked for their initiative, dash, and alertness. Their strength need not exceed ten to twelve men and they should include some sappers. These troops should be equipped with light weapons because they are not supposed to fight but only reconnoitre and investigate the road.

CONCLUSION

The superiority of troops fighting round the clock over troops fighting only for half the time during daylight is obvious. The effectiveness of modern weapons and the tremendous influence of air power on ground operations compel armies to operate increasingly during the hours of darkness. These night operations should not be restricted to limited objectives or limited penetrations. Major operations in future should contemplate fighting round the clock, both by day and night, to achieve speed and surprise. In order to be ready for such operations, night training in our Army needs a complete reorientation and, certainly, very much more attention than at present. In night training the emphasis should be more upon night adaptation and the development of night vision than upon the reliance on large-scale artificial illumination or complicated ultramodern devices.

ON 'CLICHE THINKING'

MAJOR J. NAZARETH

IN the process of learning, one of the easiest errors one can fall into is the habit of 'cliche thinking'. Cliches are trite sayings in colourful language which usually express a profound truth succinctly. Usually they are extracts of the sayings of great men whose reputations tend to give them the hallmark of veracity among the indiscriminating. What is easier for those who are mentally lazy than to borrow thoughts of great men and pass them on as their own? By constant repetition these thoughts subsequently come to be used as generalisations to cover all cases on which the thought is expressed. As cliché thinkers are in the excellent company of the great men they quote, their views are not only seldom challenged but they themselves acquire the reputation of being profound thinkers. If these clichés happen to be in Latin or Greek their scholarly reputation is assured! It is well to distinguish here between a cliché and a quotation. A quotation acknowledges that a great man has expressed the same thought that we have in a more beautiful way. As such there can be no harm in quoting. But a quotation can become a cliché if it is used as a generalisation.

Although the use of clichés sound imposing, in actual fact the shallowness of a thinker can be immediately revealed from the clichés he uses. In most cases, clichés are quoted out of context and are taken to mean something which the author never intended, because it is far easier to grasp a well expressed phrase than to try and understand the mind of the author. The real meaning of the original thought is soon lost in the wide application to which it is put as a cliché. Language is the means of conveying thought and a cliché by emphasising the beauty of a phrase stresses the means rather than the thought. It is like summarising a man's personality from his dress.

From the time in school when to improve our handwriting, we write out "Honesty is the best policy", our process of cliché thinking starts. As our education continues it appears far more profound to quote from Shakespeare, Milton and Goethe even though we may never have read their works, and are mutilating their thoughts in the process of quoting them.

In all walks of life one finds cliché thinking in profusion. The politicians have their "political strings", "iron curtains" and "comity of nations"; the educationist has his "child is the father of a man", the sportsman his "playing to the gallery" and so on.

However, we are concerned here with cliché thinking in the military sphere. Sun Tzu, Jomini, Clausewitz, Fuller and Liddell Hart have all provided our cliché thinkers with abundant material. Cliches of ancient authors seem to have the mellowness of old wine. It appears to be a criterion of scholarly wisdom to be able to draw an analogy between warfare in the stone age and in the atomic age. If one can produce a quotation from Sun Tzu to show that what he said then equally applies to warfare of today one's views tend to be accepted without question.

Any course of action can be justified by cliché thinkers with a saying blessed with the sanctity of the name of a great captain of war. For example should there be over-emphasis on administration in an operation of war, did not Napoleon say "An army marches on its stomach"? Should administration be neglected, the same Napoleon did say, "Supplies? don't talk to me about them. Twenty thousand men can live in a desert." What Napoleon's real views on administration were is quite unknown to the cliché thinker whose mind is befogged with mere words.

Whereas elsewhere cliché thinking can be treated lightly, in military matters it has had devastating results. Thousands of human lives have been sacrificed in the past through lack of independent thought among military leaders. For example, in World War I blunderers and military butchers were to use Clausewitz's phrases to justify their squandering of human lives as if to share their responsibility with Clausewitz. Clausewitz had said, "Let us not hear of generals who conquer without bloodshed." "Blood is the price of victory." "We have only one means in war—the battle." These thoughts became clichés. Whether he was right or wrong, he was criticising the operations of generals who looked upon warfare as merely a series of manoeuvres. He was emphasising the importance of the battle, that it was necessary to come to grips with the enemy. However, like most of his other views which were ill-digested, this was taken to mean that the battle had always to be sought without having to create favourable conditions for it and that an officer should lower his head and lead his troops charging like a bull. If he did not do so, he was considered to be lacking in nerve. No other use could

be found for his grey matter. This school of thought called the young Turks was headed by Colonel de Grandmaison. By their insistence they changed the existing French plan of campaign against the Germans in the event of a war, which provided for an offensive defence. According to Colonel de Grandmaison this plan was an almost complete atrophy of the idea of the offensive. He said, "We must not recoil from this principle of which only the form seems paradoxical: in the offensive imprudence is the best of safeguards." This meant that whatever the role of the force the headlong assault was the only suitable course of action and the bloody battles of World War I were the result.

Let us now discuss a few cliches nearer home. One of the common ones current is that "infantry is the queen of the battle-field." What is actually implied is not quite clear but the phrase is a pretty one probably meaning that infantry is the basic arm. The infantry having secured their title the other arms have scrambled for the remaining vacancies of "king", "ace" and "knave" of the battle-field and the Armoured Corps with a distaste for card honours have claimed the title of "prince consort." The danger of this form of thinking is that cliche thinkers to whom the infantry is the queen of the battle-field are apt to resent a subordinate role for the infantry in any operation on the strength of the cliche. Again it is common knowledge that in the past the role of infantry was eclipsed by the predominance of cavalry. Should the cycle be completed, again cliche thinkers will be the first to refuse to accept a secondary role for their "queen".

There are many other current cliches that can be examined but no useful purpose will be served in doing so. I am merely trying to illustrate the danger of cliche thinking by a few examples. "Attack is the best form of defence" is based on the Colonel de Grandmaison school of thought. The campaigns of Belisarius and Quintus Fabius show how in certain circumstances the offensive defence is the best line of operations and Hitler's campaigns in Russia show the folly and futility of persisting in the attack at all costs.

To take another cliche "the attacker must have a three to one superiority." Belisarius fought nearly all his campaigns with a numerical inferiority and was consistently victorious. Wavell with an inferior force routed the far superior Italian Army and yet this cliche has been used to justify inactivity on the ground of numerical inferiority.

Wellington's saying that "the battle of Waterloo was won on the

playing fields of Eton" has seriously affected our outlook on training. Cliche thinkers deduce from this that sportsmen make good soldiers and time is spent on sports and games at the cost of training. Even today athletic prowess is a criterion for promotion at the expense of professional ability.

Like the modern medical tendency of concentrating medicine into pills which the patient finds easy to swallow, we have tried to condense the lessons of war into "cliche pills." With the result these "pills" are supposed to be the remedy for any related problem. Here are a few examples.

"Armour must never be used in penny packets"

"MMGs and anti-tank guns must never be sited singly"

"Artillery must always be kept concentrated."

These "pills" unfortunately are also abundantly stocked in our schools of instruction where they have gradually come to be sanctified as "principles". Should any student dare violate these "principles" he is treated as a heretic. The mediocre instructor has his job cut and dried when he is armed with these "principles."

To the dismay of our schools of instruction, during the Kashmir war all these "principles" were violated. Rather than reorientate our views on cliches, the Kashmir operations were dismissed as insignificant and as "apt to teach the wrong lessons." Our schools of instruction obviously think "big" and are prepared to draw lessons only from World Wars I and yet volumes have been written by the British on the operations in the North West Frontier and other small campaigns. Throughout history small wars have been the rule, big wars the exception. With our limited resources and our independent foreign policy we are more likely to be involved in small wars. In waiting to apply the lessons of "big" wars let us beware that we do not lose the small wars that immediately concern us.

Mental flexibility is an essential for every officer. There is no harm in summarising lessons in the form of "cliche pills" so that they may be driven home. What is deprecated is cliche thinking—the tendency of officers finding the solution to every problem in a cliche without deliberating whether the cliche is applicable or not.

It is important that in all our thinking we are not overawed by the sayings of great men and hypnotised into accepting them as true. Even if these sayings were true when said the changing conditions of warfare may make them false for a later date.

A.B.C. WARFARE

SQUADRON LEADER B.K. ROY, I.A.F.

"Z is for Zink with a K for Kapitza
 Obtained from Kahlbaum—
 And that you'll admit, sir,
 's a little bit odd; never mind it's the last.
 It only remains for some heedless enthusiast
 To excite in the atom an Omega Ray
 And herald the dawn of Ultimate Day."

—Discovery

RIGHT up to 1905 the world of physics held fast to two basic laws :—
 (a) the law of the conservation of matter and, (b) the law of the conservation of energy. Matter and energy could not be created, nor destroyed. Albert Einstein, then a young man working in a Swiss patent office, upset the whole structure of physics with a very short equation :— $E=mc^2$. Nothing is indestructible. Matter can be changed into energy and vice versa. E is the energy you will get if you destroy a mass m . Not only that. The destruction of a minute amount of matter will release a stupendous amount of energy. The creation of energy involves a *loss of mass*, in the act of building big atoms from small ones, or splitting the largest of atoms into smaller ones. That is, either in the process of Fusion (the principle of the Hydrogen bomb) or in that of Fission (the principle of the Uranium bomb). Using Einstein's formula, scientists claim that a pound of coal turned completely into energy would supply as much energy as one and a half million tons of coal burned in the usual way.

The sun produces its tremendous energy and temperature, 30 million degrees F in the outer ring to 50 million degrees F in the centre, by this same process. The loss of mass in the sun due to this process is estimated at 5 million tons per second. The sun can carry on at this rate for thirty thousand million years !

To test his theory Einstein himself had suggested the use of radioactive elements because they naturally generate tremendous amounts of energy and shoot out alpha and beta particles with speeds of thousands of miles a second. A crystal of a radium salt for example, is 5 degrees warmer

than the temperature of the air and it will go on generating this heat day and night, for hundreds of years.

THE ATOM

In nature there are 92 elements. The smallest unit of an element is its atom. The atoms are further divided into the basic particles of matter of which three, electron, proton and neutron, are the most fundamental. An atom has a diameter of about 10^{-8} Cm and consists of a nucleus around which electrons revolve in one or more orbits. The nucleus of an atom contains protons and neutrons. The atomic particles are very small in size. Relatively speaking within the atom, between the atomic particles, there are *immense* distances, the arrangement being similar to that of the solar system. Thus the atom is largely void space. That is why all matter is porous.

The *electron* is negatively charged and is the basic unit of electricity. It moves at great speed and is capable of being accelerated to attain velocities in the order of 180,000 miles a second. An electric current is nothing but the movement of electrons along a conductor.

The *proton* is larger than an electron. Protons determine the nature of an element. The number of protons is constant for an element but the number of neutrons vary.

The *neutron* is a trifle larger than a proton. It can break itself into an electron and proton. Its electric neutrality is of vital significance. Because it is *neutral*, it is neither repelled nor deflected, has great penetrability of matter and is a fatal agent in the production of biological injury. It is the instrument of nuclear fission.

Isotopes are elements having the same atomic number but different atomic weights. (The atomic number is the sum of the protons, the atomic weight is the sum of the protons plus neutrons.) Each of the 92 elements has a given number of protons which is not changed. With the addition of neutrons it is possible to change the atomic weight. This is how radioisotopes for medical use are produced. Elements placed within an atomic reactor capture radiations by absorbing neutrons, become excited and then begin to emit alpha, beta particles, gamma rays, many of which are used for location, diagnosis and treatment of diseases. Radioactive iodine is extensively used for thyroid gland disorders; radiocobalt, radio-iridium and radiogold in cancer. In plain language, iodine, cobalt, iridium and

gold are cooked in the atomic furnace till they acquire a certain amount of radioactivity and become isotopes of the original element. This, as yet, is a very expensive process.

Nuclear fission is the process by which an atomic nucleus splits into fragments after it has been hit by a particle. Many particles like protons, deuterons, alpha etc. can produce fission. But neutron is the best so far. Because of its neutral charge it gets into a nucleus easily. Many elements can be split with high energy particles but not all of them can "keep it up" by producing extra neutrons which is the peculiarity of uranium and plutonium.

In a chain reaction neutrons released from the fission of one nucleus bring about the fission of at least one more which, in its turn, releases neutrons which start further fissions. A chain will die out or multiply, depending on the average of the number of new fissions that result from a previous one. If this ratio averages less than one, the chain dies out; if it is greater than one, it grows.

It is estimated that between 20 and 60 lbs of uranium are used for an A-bomb, which with its control apparatus, shielding gear and other equipment, has a total weight of 5 to 10 tons. The fission process of an A-bomb goes on in geometrical progression, with each fission nuclear energy is liberated, till about the 75th phase when the energy can no longer be contained and explodes, resulting in heat, blast and radioactivity. The entire process does not require more than $\frac{1}{2}$ to 1 microsecond.

So much for the uranium version of the A-bomb. The next and definitely more dangerous weapon is the Cobalt bomb. Readers may recall the representation made in the Australian Parliament sometime ago; an assurance that the British will not make any tests with cobalt bombs on Australian soil. The reason for Australian uneasiness was this: Cobalt 59 can capture free neutrons let loose by nuclear fission (U-bomb) or nuclear fusion (H-bomb). By capturing neutrons the stable cobalt 59 becomes radioactive cobalt 60, which emits beta and gamma rays and has a half-life of 5.3 years (half-life is the time required for a radioactive element to lose by radioactive decay, half of its radioactive atoms. Some elements have a half-life of a few seconds only. Others, uranium for example, take 4 and thorium 8 billion years to lose 50 % of their radioactive atoms!) Obviously, if cobalt were used in the atomic bombs it will maintain the danger of radioactivity over a wide area for years.

An atomic bomb may be exploded at various levels:—

- (a) Air burst—2000 ft. above sea level (Nagasaki). This produces the maximum blast, thermal effects and gamma radiation.
- (b) Underwater burst—throws up more than a million tons of water and creates a thousand foot high wave. Also causes radioactive rain. But the radiation hazards of the underwater burst are a little less and delayed than those of the air burst.
- (c) Ground level burst at an altitude of 75 ft. and below. The effects are more confined and intense.

The hazards of an atomic explosion are:—

- (a) Blast
- (b) Heat—infra red, ultraviolet and secondary flame
- (c) Radioactivity—gamma, beta and alpha rays, neutrons and induced radioactivity.

The shock wave or the blast effect of the atomic bomb is the result of the positive and negative air pressure and is by far the most destructive effect of the weapon. If the weapon is fused to burst at 2000 ft. as at Nagasaki, there will be total destruction within a radius of $\frac{1}{2}$ mile from ground zero. Damage in different degrees, from severe to light, will spread out to a radius of 8 miles. Next is the thermal effect: 20 to 30% of the fatal casualties at Hiroshima-Nagasaki were due to this. According to British estimates the atomic kill in Japan was 230,000-250,000 casualties with 104,000-124,000 deaths.

The *Hydrogen bomb* follows the process by which the sun produces its energy. The sun consists largely of hydrogen and helium and has a low concentration of carbon and oxygen with a few heavy elements. Because of the extremely high temperatures, about 50 million degrees F, molecules and compounds do not exist on the sun. With this high temperature there is also the high pressure, of about a billion tons per square inch, and these conditions are ideal for the maintenance of reactions.

It has been known for sometime that very large amounts of atomic energy would be liberated from the synthesis of heavy atomic nuclei. But reactions of this kind could take place only when atomic particles collide at high velocity and this can only happen under temperatures as high as those in the sun.

It is only likely that a hydrogen bomb will use a uranium bomb mechanism as a detonator to produce the temperature and pressure necessary for the synthesis of helium from deuterium or tritium.

Though the H-bomb is estimated to be 1000 times more powerful than the A-bomb, it should be understood that the destructive effects will be much less than 1000 times those produced by the A-bomb. This is because the effective distance of the blast increases as the cube root of the increase in power; and heat and atomic radiation as the square root of the increase in power. Quite apart from the question of the availability of the fissile elements, there is the problem of cost. The atomic bombs are very killing no doubt, but the economic consequences of producing and stockpiling them are equally ruinous. It is estimated that an atom bomb today costs between 6 and 7 crores of rupees. The Monte Bello explosion is reported to have vaporised £ 100 million from the British treasury. Where will the money come from? If atomic industry were allowed to develop freely there might have been a possibility of its paying for the weapons. But atomic knowledge, save for a few chosen scientists, is taboo.

In America and England atomic developments have been possible at all because of the great combines like Kellogg, Westinghouse, Monsanto Chemicals, Du Ponts, General Electric, Imperial Chemical Industries and others. But today these combines themselves are feeling the need for the development of atomic industry along non-military lines. A thousand things of immense value to life and civilization could be at the disposal of humanity if only the atom scared men remembered that the giant Aladdin released was, after all, a jolly good fellow.

CHEMICAL WARFARE

The principal means of chemical warfare are gas, used in solid, liquid or vapour form; incendiaries and smoke. By itself, smoke causes no damage and it can be left at that. Gas produces physiological incapacitating effects on the body. A chemical agent like gas produces its effects by chemical reaction with the tissues of the body through breathing, swallowing or direct contact with the skin. The area affected by a chemical bomb is many times greater than that affected by a similar sized high explosive bomb. The effects of the H.E. bomb, concussion of the explosion and the striking force of the flying fragments do not extend beyond a relatively small area surrounding the point of burst. The contents of the chemical bomb on the other hand, in the form of gas or vapour, cover a much greater

area. The action of a chemical bomb is uniform whereas that of the H.E. bomb is rather erratic. Within the danger zone of an H.E. burst not everyone will be hit by a flying fragment. There is the element of chance altogether absent in the case of the chemical bomb. Then, again, the fragments of an H.E. bomb follow their own trajectories, a shallow trench or copse of trees will provide shelter to some. But uniformly spread out chemical agents will stop at no such obstacles.

Gas is not normally used in winds above 15 miles per hour. Though a higher wind may blow away non-persistent gases, it cannot remove the danger that results from contamination by persistent liquids. And, there are really very few days when gas properly employed, cannot be effectively used. Gases are classified according to their physiological effects :—

- (a) Tear gases
- (b) Irritant gases
- (c) Suffocating gases
- (d) Blistering gases
- (e) Toxic (nerve) gases

Tear gases affect only the eyes. Irritant gases, produced from arsenical compounds, cause severe nausea and are effective even in very low concentration. Suffocating gases attack the pulmonary system and may prove fatal to unprotected persons in ten minutes time. They are very dangerous weapons in air attack. The blistering gases attack the eyes and the lungs and the most dangerous thing about them is that their effects can be noticed only when it is too late. They also possess great penetrating power. Toxic (nerve) gases act on the nerves and produce death by paralysing the central nervous system. A few breaths of hydrocyanic acid are sufficient to cause death within a few minutes. Modern chemistry has developed toxic (nerve) gases ten times more dangerous than those previously known. These chemical agents may be used either in the form of gas bombs or by means of spray apparatus. The spraying apparatus is the most economical and efficient method of disseminating chemicals.

The following are the *known* principal war gases and their properties :—

Type	Name	Persistency	Odour
Tear	Brombenzylcyanide	3—7 days	sour fruit
	Chloroacetophenone	10min.—/1hr.	apple

Irritant	Adamsite	10 min.—1hr.	nearly odourless
	Diphenylchlorarsine	5min—10min	boot polish
	Diphenylcynarsine	„ „	garlic
Suffocating	Phosgene	10min—30min	hay
	Diphosgene	15min—1 hr.	bad smell
	Chloropicrin	1hr—4 hrs.	sweet
Blistering	Mustard gas	1—7 days	garlic
	Lewisite	„ „	geranium
	Ethylchlorarsine	1—6hrs.	Irritating
Toxic (nerve)	Hydrocyanic acid	5min—10min	almond
	Cyanogen chloride	10min—20min	irritating

In considering gas attacks most people are misled by the fact that gas on the open ground is quickly dissipated and easily neutralised by decontamination. In fact, the most serious of all is the gas liberated indoors. It is not possible to count on closed buildings either, for, firstly, it is impossible to remain airtight for any length of time in summer; and secondly, a percentage of the bombs used in gas attacks will create enough opening for gas to go in and to do its lethal job. Decontamination of unprotected personnel and buildings in large concentrated areas is an impossible task and a gas cum H.E. air attack is sure to produce the most serious casualties and demoralisation among the people. The gravest dangers of air attacks are the element of surprise (a very large number of people will be caught unawares) and the demoralising effect of the fear of the unseen and known.

Incendiaries are chemical agents capable of causing direct fire to material and personnel. As soon as the chemical agent comes into contact with the surrounding air it ignites itself and generates sufficient heat and flame to set fire to ordinary combustible materials. Incendiaries are far

more effective than H.E. in producing fires and that accounts for its popularity in World War II.

Generally speaking, incendiary agents are of four types:—

- (a) Spontaneously inflammable materials (phosphorus and sodium)
- (b) Metallic oxides (thermite/thermate)
- (c) Oxidising combustible metals (magnesium)
- (d) Inflammable materials (celluloid, resin, pitch, solid oil etc.)

Phosphorus is most important. On exposure it combines with oxygen and ignites spontaneously. In addition to its incendiary effects on material, it is very effective against personnel because it sticks and burns through clothing. Mixed with inflammable liquids it can be used very effectively from aircraft with spraying apparatus.

Thermite is a mixture of iron oxide and aluminium. When ignited this mixture produces enormous heat. For starting a conflagration thermite is perhaps the most effective chemical agent.

Thermate is modified thermite, mixed with other suitable chemicals (aluminium, barium nitrate etc.) according to *military requirements*.

Magnesium when heated to its ignition point combines with oxygen and burns with a dazzling white heat, very difficult to put out. Also, it is *completely* consumed by combustion. In combination with thermite it is one of the most effective incendiary agents.

Oxidising combustible metals are incendiary mixtures containing chemical agents like barium, potassium nitrate, with carbon, magnesium, sulphur etc. Thermite mixtures are more effective and have replaced these combustible mixtures.

Inflammable materials include petroleum oils, carbon disulphide, wood distillation products, celluloid, pitch, resins and many oils and liquids which are not spontaneously inflammable. They help as secondary and liquid incendiary agents.

Thermite and magnesium, however, are not the best materials for generating heat. Petroleum, pitch, phosphorus and sodium generate much greater quantity of heat. But considerations of their weight and burning characteristics render them somewhat unsatisfactory as incendiary agents. During the second world war much research went into the development

of solid oils possessing the most desirable incendiary properties. The most well known of these jellied oils are (a) saponification of gasolene in butyl methacrylate, and (b) gasolene saponified in napalm. These are more effective than the thermite-magnesium combination.

In air attack various types of incendiary weapons like incendiary bombs, magnesium bombs, solid oil bombs and incendiary sprays are used.

Incendiary weapons can start fires simultaneously over a very large area. Combined with H.E., incendiaries played havoc with Hamburg in July 1943. Similarly incendiaries left Tokyo in ruins in March and April 1945. In their power to damage property and life incendiaries come second only to atomic weapons. "In summarising the effects of bomb damage to German cities in World War II, on an equal weight basis, incendiaries were 4·8 times as effective as H.E. bombs on residential areas and against smaller industrial and mercantile properties."

BACTERIAL WARFARE

Diseases kill more human beings than perhaps any other form of disaster can. The pathogenic microbes that cause disease among humans, animals and plants can be used as military weapons. After the Germans had used gas in the First World War the Allied scientists were quite worried about the possibility of their using bacterial agents. But the state of technical development at that time did not favour the use of this weapon. The Germans and the Japanese, however, had been carrying on intensive researches on this aspect of warfare. Japan did make a bacterial attack on the Chinese town of Chaugteh before the second world war. According to reports, the Japanese, laboratory could produce about a ton of bubonic plague bacteria per month. These days all the great powers are accusing each other of developing the weapons of bacterial warfare. And this, in fact, all of them are doing very religiously.

Bacteria are living organisms with two special qualities—they cannot be seen, sometimes not even with a high powered microscope; and they can multiply within the body they invade. It should of course be understood that all bacteria are not harmful. If they were, the human race would have ceased to be ages ago. Some bacteria are positively beneficial; some are harmful and the rest, neutral. Bacteria are generally grouped accord-

ing to their shape and classified according to their similarity to the animal or the vegetable world :

Cocci	—minute spherical cells	
Bacilli	—rod-shaped cells	(shape)
Spirella	—spiral filaments	
<hr/>		
Protozoa	} animal	
Spirochetes		
Fungi	} vegetable	(class)
Actinomycestes		
Pleuropneumonia	} other forms	
Rickettsial		
Viruses		

The size of bacterial agents ranges between 1/5 micron and 1/100 micron in diameter. (micron — 1/25000 inch). Pathogenic bacteria cause chemical changes in the tissues and fluids of the body they attack. These changes also result in the production of toxins (poisons). To counteract the effect of toxins the natural defence mechanism of the body produces anti-toxins (antibodies). Certain non-poisonous toxins known as toxoids, can be artificially produced in the body to kill off or neutralise pathogenic bacteria (vaccines and other immunising sera for example). Bacterial agents require a certain amount of time (incubation period), from hours to weeks according to the type of bacteria, before they can produce harmful effects on the tissues and fluids of the body.

To be effective in war, bacterial agents should be able to meet certain requirements. Broadly speaking, they should—

- (a) produce casualties
- (b) infect easily and spread quickly
- (c) survive in unfavourable conditions
- (d) be available in quantity
- (e) be difficult to detect
- (f) act quickly

The following bacterial agents have remarkable possibilities :—

Cholera

Diphtheria

Dysentery

Influenza
Leprosy
Malaria
Meningitis
Plague
Pneumonia
Poliomyelitis
Small pox
Syphilis
Tactanus
Tuberculosis
Typhus

It should be noted that against some of these (diphtheria, small-pox and taetanus) there are very effective vaccines. Leprosy and tuberculosis are very slow-acting; and syphilis requires direct contact. As such these agents may not be considered as very practicable weapons of bacterial warfare.

In many ways the principles of bacterial warfare resemble those of chemical warfare. The toxicity of a chemical agent is tantamount to the potency of a bacterial agent which will be required to contaminate a target area in very much the same way. Bacterial agents will be spread like chemical agents, from the air with bombs and sprays. Insecticides are being spread on crops and malarial areas cleared in many parts of the world. The technique is already there. There is one uncanny aspect of bacterial warfare and that is the unlimited possibility it offers to sabotage by enemy agents.

The power of bacterial warfare can be gauged from the ravages of epidemics; it is no longer a matter of speculation. Bacterial agents will produce casualties but no damage to property and material. Against personnel and living things they will be disastrously effective. Hormone bombs, however, could kill off all plants and crops by speeding up their growth.

Weight for weight, neither H.E. nor chemicals, nor bacterial agents can produce anything like the disastrous effect of an atomic explosion. It should not be forgotten however that the overall weight of an atomic bomb is somewhere between 5 and 10 tons, and it needs at least a B-29

to carry it. Also its production and costs are prohibitive. Only a few top class world powers can indulge in such luxury and that too not without grave consequences to their national economy. Besides the money and material factors, production of atomic weapons will tie up a very large number of technical personnel, between 100,000 and 150,000 men with varying degrees of technical skill and scientific knowledge.

As against these, bacterial weapons will require very simple plants and small number of men. The plants themselves will be of small size, small enough not to make profitable or recognisable targets from the air. In undeveloped and semi-developed countries where mass inoculation and immunisation are not possible, bacterial weapons will create havoc. Then there is another very vital factor to consider: the nature of casualties. Bacterial weapons, unlike atomic weapons, will not kill at once. There will be always chances of cure and as such their victims will tie up a disproportionately large amount of the nation's medical resources. Every house, if it escapes becoming a morgue, will be a hospital. It is a devilishly seductive weapon, cheap and effective. It is difficult to see why a nation whose very survival may be in question (and why?) should not feel tempted. Ethics do not come into it at all. The only morality in life is to preserve life and make the prospect of living on earth a pleasure. Anything contrary to that is immoral. The choice between bubonic plague and napalm may be a technical-legal problem. Humanity's choice is obvious: it is, really, neither.

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STRINGER LAWRENCE

BRIGADIER H. BULLOCK, C.I.E., O.B.E., F.R. HIST. S.

XI. THIRD TERM (1761-1766) AND RETIREMENT (1767-1775)

AFTER a passage of 211 days the *Warren* reached England on 27th March, 1760. Instead of remaining there for the remainder of his life, Stringer Lawrence was to spend less than a year at Home. On his arrival the East India Directors voted him an annuity of £500, and commissioned statues of him, Clive and Admiral George Pocock at a cost of £605 10s. That of Lawrence, executed by Peter Scheemakers, portrayed him according to current convention in classical Roman attire and was placed in the General Court Room of the India House. In January 1761 the Directors also commissioned a portrait from the brush of Joshua Reynolds, which was to find a place in the Council Room of the India Office.¹

How he spent his 11½ months in England is not on record, but much of the time was doubtless passed in the company of his intimate friend Robert Palk, with whom he had travelled home in the *Warren* and with whom he was shortly to embark again for the East. It is safe also to assume that his health rapidly benefited from the sea voyage and the English climate, for early in 1761 he agreed to undertake another tour of service in India as Commander-in-Chief of all the Company's forces, with the rank of major-general, a seat as additional member of Council next below the Governor, and pay at £1,500 a year exclusive of allowances. The annuity of £500 ceased during his recall to India, but was resumed when he finally left.² And so he and Palk sailed in the Company's ship *Fox* on 20th March, 1761, and landed at Madras on 2nd October, after a voyage of 198 days.

His position was now bettered in other respects. He had power to vote in Council without restriction, whereas he had hitherto been confined to casting a vote on military subjects. His commission as major-general came from the King, to ensure that he should not be subordinated to any King's officer of the rank of colonel. Eyre Coote was now in command of both the royal and the Company's forces in Bengal; but Lawrence's

authority provided that should he visit Bengal he was to have a seat on the Council there and take precedence over Coote. He was given a brigade-major and an aide-de-camp, the first Indian commander to have a personal staff except on active service. All these amenities and privileges bore witness to the determination of the East India Company to do honour to their veteran leader, to maintain his prestige, and to insure against slights and friction of the sort which had prejudiced their interests in the past and which Lawrence was quick to perceive and resent.³

His third term lasted from 3rd October, 1761, until 3rd April, 1766—fifty-four months. Halfway through it, in November, 1763, Robert Palk became Governor of Fort St. George, and so remained for the rest of Lawrence's time and until 1767. This amazing man had come out as a naval chaplain with Boscawen's fleet in 1748, transferred to the Company's ecclesiastical employ in the following year, and as we have seen had accompanied Lawrence as political adviser on several diplomatic missions during the crucial years of the struggle with Duplex. By the time he returned with Lawrence in 1761 he had doffed his surplice to become a covenanted civil servant on the Madras establishment, as Third in Council. His presence at Fort St. George in a place of authority did much to render Lawrence's last long spell there thoroughly congenial.

During the "Old Cock's" absence the situation *vis-à-vis* the French had immensely improved. At the beginning of 1760 Eyre Coote, now lieutenant-colonel of the 84th Foot, had smashed Lally's army at the battle of Wandewash. Then he mopped up the enemy outposts, and by the end of the year was laying siege to Pondicherry itself. The seat of French government surrendered to Coote on 16th January, 1761. Lally was taken prisoner and sent to Europe; and, when he reached France, incarcerated, tried, and at length, unjustly beheaded.

The first important military matter in which Lawrence was now involved was the attack on Manila. The British government had decided to send a land and sea expedition to the Philippine islands and asked the Company to help with troops. At Madras an organising committee was set up, amongst its members being Lawrence and Draper, who was to command the military forces with the rank of brigadier-general. A shadow Council, with a deputy governor, for Manila, was chosen from among the Company's staff at Fort St. George and before long the Company and the prospective expeditionaries were discussing their shares of the rich booty and plunder which they confidently expected would be forthcoming. Just

before the fleet sailed Draper curtly informed the Council that the price of its co-operation could not be more than one-third of the spoils of war, and he was out at sea before their protest could reach him. He took Manila, but the Spaniards soon ransomed it for a million pounds in bills on Madrid. As the bills were never honoured, Spain had the last laugh. Lawrence was against the project from the outset, on the ground that Madras could not safely spare the troops.⁴

In 1763, as a result of representations from Madras which must have owed their inspiration to Lawrence, the Directors gave sanction to a reorganisation of the Coast Army.⁵ The total establishment was to be 2,600 Europeans and 4,000 sepoys, officers included. The three European battalions were each to be 700 strong, commanded by a major; and there were to be two European cavalry companies and three artillery companies, all 100 each. Each of the four sepoy battalions was to have a captain and two more British officers. Caillaud, then in England, became brigadier-general commanding in Bengal, with contingent reversion to Lawrence as commander-in-chief. Six months later it was decided instead that the European corps were to be called regiments, not battalions, each with a colonel, lieutenant-colonel and major; and the three colonels first appointed were Caillaud, Charles Campbell, and Achilles Preston (who was killed at Madura that year, 1764). The change meant a substantial improvement in the prospects of promotion of Company's officers to the higher ranks. The Coast Army had travelled a long way from the one major (Lawrence) and no captains of 1748, and the one lieutenant-colonel (Lawrence again), one major and 20 captains who headed the army list in 1756. Now they had a major-general, a brigadier in Bengal, and three full colonels, to say nothing of lieutenant-colonels.

Of Lawrence's last years in harness there is little more to chronicle, for Palk's tenure of the governorship was uneventful, the first lengthy period of real peace that Coromandel had known for a generation. In the spring of 1766 he wrote to the Madras Council: "As I find my health will not permit me to stay another hot weather in India, I beg you will be pleased to order a passage for me and my servants on board the *Pacifick*." Sanction was at once given, and the Council resolved that "a letter should be addressed to the General assuring him of the just sense we have of the many signal services he has rendered the Company, in which he has at all times shown the most sincere and disinterested attachment to their interest". They accordingly wrote to him in much the same words,

concluding: "We heartily wish you a safe and pleasant passage to Europe and that you may long live to enjoy those blessings which your extraordinary merit deserves."⁶ At nightfall on 3rd April, 1766, the *Pacifick* with Lawrence on board sailed in company with H.M.S. *Argo* for England. He spent 259 days at sea, arriving on 18th December, 1766.

Lawrence's retirement lasted eleven years. A bachelor, he passed much of his time as a guest of the Palks at Sir Robert's country estate of Haldon, in South Devon. Lacking the inclination and doubtless also the money to play the squire and gentleman farmer or take rank among the country gentry, he formed no territorial ties. Not for him was the building of a bizarre orientalist mansion like Cockerell's Sezincote or the landscaping of a park with incongruous Hindu "temples" as John Osborne did at Melchet. He rented a *pied-a-terre* in London, in Bruton Street, presumably because Palk's town house was in that thoroughfare, and in common with most of his class and age paid Bath an occasional visit, probably on medical advice. With his birthplace, Hereford, he retained no apparent connection; and he had no discoverable near relatives except an obscure nephew and his wife. The Palks at Haldon evidently delighted in his company. Orme had thought him vain in the 1750's, but he was not so in old age, for Sir Robert bore witness to "his modest manner of writing, his singular diffidence in speaking of himself".

Major-General Stringer Lawrence died at his residence in Bruton Street on 10th January, 1775, and was buried on 22nd January in the Palk family vault within the church of St. Michael and All Angels in the little village of Dunchideock on the fringe of Exmoor. (Haldon House is outside the parish, but this is the church nearest to it). In 1892, as the subsidence of the tower had rendered the vault insecure, a new burial-chamber was constructed in the churchyard, outside the western end of the church; and as a tablet erected in 1912 records, in it were re-interred the remains of Sir Robert and Dame Anne his wife with eleven of their descendants, as well as those of Stringer Lawrence their "life-long friend". And so, at Dunchideock in 1947, the writer met a man who had been present at the burial of the Father of the Indian Army who died in 1775.

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- (1) Minutes of a General Court, 24 Sept. 1760. The *Dictionary of National Biography* states wrongly that other monuments exist at Calcutta and Madras.

- (2) Court of Directors to Lawrence 4 Dec. 1776 (*sic*—should be 1766), in *Report on Palk MSS.*, 1922, p. 13.
 - (3) Biddulph, pp. 109-110.
 - (4) Love, vol. II, pp. 586-7.
 - (5) Calendar of Madras Despatches, 30 Dec. 1763 and 1 June 1764; Love, vol. II, p. 588.
 - (6) Madras Military Consultations, 17th and 26th March, 1766.
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"OLD NICK"

LIEUT.-COMMANDER (S) F.C. HYTTEN, I.N.

NICCOLO Machiavelli is reputed to have given his name to "Old Nick" the very Devil himself! Whether he deserves this unique distinction or not is, however, a matter on which, in our times, opinion differs.

Who was Machiavelli? Why should he be singled out as the very epitome of devilish intrigue, unscrupulous, unprincipled diplomacy and depraved, double-faced, shifty political manoeuvring? What did he have to say regarding the Armed Forces? Can Servicemen of the 20th Century profit from his writings?

Undoubtedly they can. His tough, down-to-the-earth analysis of the ingredients of man-management, of leadership, was written for the princes and generals of his day, but all who have to deal with men, who have to lead them, cannot but profit from the sound, sane, sober advice with which his writings are liberally sprinkled.

To understand the man and his message it is perhaps useful to know something of his life. This Number One "Machiavellian" diplomatist, who among his other accomplishments has bequeathed a most expressive word to most European languages, was born in 1469 of a family of impoverished Florentine gentry. Of his early years and education little is known. At 29 he entered the civil service of his State in a minor capacity but his innate flair for statecraft quickly won him the confidence of his masters who soon sent him on diplomatic missions, and in a few years he had visited most city states in Italy and many of the courts outside. Probably his most fruitful experience was his period as envoy to the camp of Cesare Borgia that masterful and unscrupulous soldier of fortune who paved his way to power by the murder of those who stood in his way!

Early in his career Machiavelli had met most of the leaders who dominated his world and he was in a position to become the first modern analyst of power. While others looked at the figureheads Machiavelli looked at them and also at the powers *behind* them.

But life was never static in the Florence of his day. He was a republican and so when the Medici came into power in 1512 he was cast out. After fourteen years of service he found himself out of office. No punishment could have been more severe to Machiavelli to whom the civil service was dearer than life itself. Staunch republican though he was, he was more than prepared to compromise his political convictions for the merest chance of being reinstated in office. With unbecoming haste, therefore, he set about a correspondence campaign to be reinstated in the favour of the Medici. Fourteen years of endeavour however did not avail him. And then, to his great joy, in 1527 the popular party in Florence once again overthrew the Medici. Confident of a warm welcome, Machiavelli hurried back to Florence.

During his enforced idleness Machiavelli had reached the peak of his creative power. He had turned to his pen and had presented the world with "The Prince", "The Art of War", "The Discourses", various plays and histories, poetry, stories and biographical sketches.

The small unimaginative men who had it in their power to dispense office had read his works and were afraid of his brilliance and wit. They determined not to reinstate him. Mercifully, Machiavelli fell sick and before the decision was conveyed to him he died.

Machiavelli stepped off the stage of life but his books live, and will live on, a monument to his astuteness for all time. It is remarkable, however, that his best known works "The Prince" and "The Discourses" contained very little that was original. What then has given his writings their greatness? The humanists who, before him, had written books on the business of Government had written in the idealistic and scholastic mediaeval style—steeped in theology and metaphysics. Machiavelli had no time for idealism. He was a realist and did not hesitate to write that men—especially those on top—do not, *can* not, always act in accordance with their pious professions.

His outspoken advice and commentary so near the bone, shocked his contemporaries out of their smug self-righteousness—as they were to shock many succeeding generations. They threw up their hands in horror, and not to be found wanting in the condemnation of such blasphemy, lest their own duplicity and intrigues should be discovered, were quick in disassociating themselves from this "incarnation of the devil", and his satanic exhortations.

Machiavelli concentrated on statecraft, but as there can be no state without an army, he has much to say on the art of war and about the management of fighting men. For instance, talking about the duties of a prince with regard to the militia, he writes:

"The prince ought to read history and study the actions of eminent men, see how they acted in warfare, examine the causes of their victories and defeats in order to imitate the former and avoid the latter. He should never remain idle in peaceful times, but industriously make good use of them so that when fortune changes she may find him prepared to resist her blows and to prevail in adversity".

In a later chapter he shrewdly counsels that:

"To make an army victorious in battle it is necessary to inspire them with confidence, so as to make them believe that the victory will be theirs under any circumstances. But to give an army such confidence they must be well armed and disciplined, and the men must know each other. It is necessary also that they must esteem their general, and have confidence in his ability; and this will not fail to be the case when they see him orderly, watchful and courageous, and that he maintains the dignity of his rank by a proper reputation. All this he will do by punishing faults, by not fatiguing his troops unnecessarily, by strictly fulfilling his promises, by showing them that victory is easy, and by concealing or making light of the dangers which he discerns afar. These maxims well observed are the best means of inspiring the troops with that confidence which is the surest pledge of victory."

There can be no doubt that these words of Machiavelli are, essentially, as true today as they were when he first wrote them nearly four hundred and fifty years ago. Yet, how many observe them? "The men must know each other" Machiavelli declared. Nelson thought the same, in referring to his "Band of Brothers". The U-Boat killers of the Western Approaches in World War II thought the same too. Every time this doctrine has been propounded it has been hailed as something new; its novel brilliance has captured the minds of leaders and historians afresh on each occasion it has been put forth!

Machiavelli's "The Art of War" provides a wonderful insight into the machinery of war in his days. It is written in the form of questions

and answers and is certainly illuminating reading to every fighting man. The book is, however, out of print and is not generally available in the shops, but it can still be borrowed from most public libraries.

Probably, the art of government and man-management has changed little since the middle ages and that is why Machiavelli's "The Prince" and "The Discourses" are even now available in popular editions! "The Art of War" as expounded by him is, however, more or less antiquated. All Servicemen will heartily agree this to be true at least in so far as the following extract is concerned:

"War being an occupation by which a man cannot support himself with honour at all times, ought not to be followed as a business by any but Princes and Governors of Commonwealths, and if they are wise men they will not suffer any of their subjects or citizens to make that their only profession. Indeed no good man ever did, for surely he cannot be called a good man, who exercises an employment that obliges him to be rapacious, fraudulent and cruel at all times in order to support himself as all those must be of course who make a trade of war."

Machiavelli was certainly candid and forthright in his writings. No doubt, the following excerpt from "The Prince" helped earn him his appellation of "Old Nick":

"You must know then, that there are two methods of fighting, the one by law, and the other by force: the first method is that of men, the second of beasts; but as the first method is often insufficient one must have recourse to the second. It is, therefore, necessary for a prince to know well how to use both the beast and the man. This was covertly taught to rulers by ancient writers, who relate how Achilles and many others of those ancient princes were given to Chiron the centaur to be brought up and educated under his discipline. The parable of this semi-animal, semi-human teacher is meant to indicate that a prince must know how to use both natures, and that the one without the other is not durable.

"A prince being thus obliged to know well how to act as a beast must imitate the fox and the lion, for the lion cannot protect himself from traps, and the fox cannot defend himself from wolves. One must, therefore, be a fox to recognise traps, and

a lion to frighten wolves. Those that wish to be only lions do not understand this. Therefore, a prudent ruler ought not to keep faith when by so doing it would be against his interest, and when the reasons which made him bind himself no longer exist. If men were all good, this precept would not be a good one; but as they are bad, and would not observe their faith with you, so you are not bound to keep faith with them. Nor have legitimate ground ever failed a prince who wished to show colourable excuse for the non-fulfilment of his promise. But it is necessary to disguise this character well, and to be a great feigner and dissembler; and men are so simple and so ready to obey present necessities, that one who deceives will always find those who allow themselves to be deceived."

It is interesting to note that Machiavelli had one precept for the general and another for the prince. Whereas he exhorts the soldier "strictly to fulfil his promises", he assures the ruler that "he ought not to keep faith when by so doing it would be against his interest"!

And finally, here is a bit of "Old Nick" at his satanic best. As in Machiavelli's time, so today, many will no doubt violently disagree with this diabolic diplomatist, but many more will admit to a sneaking suspicion that the old devil is probably right! This is what he says in his chapter "Of Cruelty and Clemency and Whether It Is Better To Be Loved Or Feared":

"Every prince must desire to be considered merciful and not cruel. He must, however, take care not to misuse this mercifulness. A prince must not mind incurring the charge of cruelty for the purpose of keeping his subjects united and faithful; for with a very few examples, he will be more merciful than those who, from excess of tenderness, allow disorders to arise, from whence spring bloodshed and rapine; for these as a rule injure the whole community, while the executions carried out by the prince injure only individuals.

"From this arises the question whether it is better to be loved more than feared, or feared more than loved, but as it is difficult for the two to go together, it is much safer to be feared than loved, if one of the two has to be wanting. For it may be said of men in general that they are ungrateful, voluble, dissemblers, anxious

to avoid danger and covetous of gain ; as long as you benefit them, they are entirely yours ; they offer you their blood, their goods, their life, and their children, when the necessity is remote; but when it approaches, they revolt. And the prince who has relied solely on their words, without making other preparations, is ruined; for the friendship which is gained by purchase and not through grandeur and nobility of spirit is bought but not secured, and at a pinch it is not to be expended at your service. Still, a prince should make himself feared in such a way that if he does not gain love, he at any rate avoids hatred; for fear and the absence of hatred may well go together and will be always attained by one who abstains from interfering with the property of his citizens and subjects or with their women."

And he concludes rather bleakly :

"When he is obliged to take the life of anyone, let him do so when there is a proper justification and manifest reason for it; but above all he must abstain from taking the property of others, for men forget more easily the death of their father than the loss of their patrimony" !

THE KUMBH MELA—1954*

COLONEL V.V. RUTHNASWAMY

ONCE every 12 years, from times immemorial, the Purna Kumbh Fair has been held at the sacred Sangam—the confluence of the rivers Ganga and Jamuna—at Prayag, Allahabad. This Mela is the biggest religious ceremony in the country, and probably in the world. It is held throughout the month of *Magh i.e.*, January and February.

Every intervening sixth year Ardh Kumbh, and in the remaining years the annual Magh Melas are held. At the annual Magh Melas pilgrims from all over the country totalling 10 to 15 lacs congregate, during the Ardh Kumbhs 25 to 30 lacs and on the full Kumbhs 35 to 40 lacs of pilgrims assemble.

The Kumbh Mela of 1954 was the first one in independent India, and was also considered by pandits and astrologers as specially holy, as it took place in the year of ' *Malmas* ' which occurs once in every 108 years. The civil authorities, taking all factors into consideration, estimated that for the Kumbh of 1954, 50 lacs of pilgrims would assemble.

The civil administration, in addition to the problem of making arrangements for sanitation, hygiene, control and other administrative requirements for this vast concourse of people, were faced with the following problems:—

- (a) An adequate area for accommodating the Mela.
- (b) Bathing Ghats along the banks of the rivers Ganga and Jamuna.
- (c) Allowing for a continuous flow of pilgrims on all roads leading to the Mela area.

The land utilised for the previous Kumbhs was, in 1950 when there were 32 lacs of pilgrims, 625 acres. In 1948 for 30 lacs of pilgrims the area occupied was 690 acres and in 1942 for a meagre 12 lacs the area available was 577 acres. In 1954, the number of pilgrims that were

* Reproduced by courtesy of The Journal of the Institution of Military Engineers. The appendices etc. have been omitted. (Ed.)

expected was over 50 lacs, and it was estimated that at least one thousand acres of land would be required.

The river Ganga now flows close to the Bund, and hence barely 85 acres of land was available as against 300 that was available in the Ardh Kumbh of 1948 and 500 during the Kumbh of 1942. Moreover, the main current was fast cutting into the banks and reducing even the area that was available, and immediate action had to be taken to prevent further scour.

340 acres of land existed to the north of the Bund known as the Parade Area which was military land, and therefore approximately 500 acres of land that existed on the left bank of the river Ganga would have to be utilised for the Mela.

Thus, with approximately 50% of the Mela being arranged for the Jhusi side, *i.e.*, across the river Ganga, it was apparent that the two pontoon bridges which were normally built by the PWD for the previous Melas would not be sufficient. Consequently, the minimum requirement was estimated at six bridges across the river Ganga.

The top of the left bank of the river Ganga was, throughout its length from the 'Sangam' for a mile, 25 feet to 30 feet from the water-level. In order that pilgrims could approach the river with safety and ease, it was essential that the precipitous side be eliminated by sloping the ground to the river bank.

The banks of the river Jamuna, which normally were hard and of easy slope and did not present any problem in the past were, however, during this period very treacherous as, all along the bank due to subsoil water, it was very soggy and marshy and hence dangerous. This had to be overcome in order to ensure that it was not a death-trap for the mass of pilgrims who would use this area.

The railways planned to run 30 to 40 special trains during the peak days to the Sangam Railway Station, and this created a serious problem to the pilgrims coming from the city and those coming by road. It was anticipated that the four level crossings at Lowther Road, Grand Trunk Road, Cemetery Road and Fort Road would have to be closed every twenty minutes in half an hour. The rush on peak days on the roads is such, that once the level crossing gates were open, it would not be possible

to close them again, and the only solution lay in the construction of overhead bridges at these crossings.

The District Magistrate, Allahabad and the Administrative Officer, Northern Railways, Allahabad, prepared a joint note and submitted it to the Ministry of Defence and the Railway Board. In this they clearly indicated the requirement of land, and that its release by the Army authorities at an early date was vital. However, in this area required by the civil authorities, the Salvage Depot holding 3000 tons of stores was located, and all these stores would have to be moved to another area, entailing also the removal of the barbed-wire fence around the Salvage Depot. In the note it was also pointed out that pedestrian overhead bridges at the level crossings would be required.

Subsequently, the civil administration were forced to request more assistance of the Army than was originally outlined in the Joint Note prepared by the District Magistrate and the Administrative Officer, Northern Railways. An extract from the Officer-in-Charge, Kumbh Mela's report on 'Arrangements made by the General Administration Department' read:

"It became apparent that unless the help of the Army could be taken in such a greater measure than had appeared necessary hitherto, a number of major works could not possibly be completed within time.

Accordingly a note was put up by the Officer-in-Charge on 17 October 1953, detailing the items in respect of which urgent Military assistance was inevitable, and with the concurrence of the Chief Minister, who came a day earlier, advantage was taken of the visit of the Prime Minister to Allahabad on 10 October 1953 to informally acquaint him with the pressing urgency of our need. Needless to say that but for the prompt help got from the Central Government as a result thereof, a vital part of the work *e.g.*, construction of 3 Army bridges across the Ganga, overhead bridges at level crossings, the levelling and grading of river banks etc., and a host of other things done by the Army Engineers could not have been done either well or perhaps at all".

A number of conferences were held, at some of which the Engineer-in-Chief, Director of Movements and Quartering and the Chief Engineer,

Eastern Command attended, and at which the assistance required by the civil was discussed and agreed upon.

The tasks that the Army had to complete by 25 December 1953 were as follows:—

- Six overhead pedestrian bridges at level crossings.
- Two pontoon bridges over the river Ganga (if possible three).
- Five control towers of 20 feet high.
- Dozing of the Ganga left bank for a distance of one mile.
- Levelling of the Parade Ground Area.
- Operation of searchlights.
- Fencing of R.S.S.D.

The sanction of the Ministry of Defence for assistance to the civil authorities was accorded in their letter No. 34019/169/E3C1/7793-E/D (Q & Eng.), dated 5th November 1953 which said :

I am directed to convey the sanction of the President to the employment of Military Units and the following equipment for work in connection with the Kumbh Mela to be held at Allahabad.

- | | | | |
|---|----|----|----------|
| (i) Bailey Bridge Class 40.130 D/D | .. | .. | 25 sets |
| (ii) Bailey Pontoon Class | .. | .. | 7½ sets |
| (iii) Erection gear for Bailey Bridge | .. | .. | 14 sets |
| (iv) Transoms | .. | .. | 144 Nos. |
| (v) Crawler Tractor Size I with Angle Dozer attachments | .. | .. | 2 Nos. |
2. The Military units and equipment will be employed on the terms and conditions given in Government of India letter No. F.1 (3)/53/D (GS), dated the 2nd September 1953.
 3. Any administrative instruction considered necessary will be issued.

It will be appreciated that to complete the tasks it was necessary to by-pass normal channels of correspondence, in order that stores which had to move from various depots spread all over India could reach Allahabad in time.

The Chief Engineer, Eastern Command, issued a Charter for the Deputy Chief Engineer, Kumbh Mela, clearly indicating the various tasks to be carried out by the Army Engineers and also laid down specific instructions for the accounting of the expense incurred.

It was realised that it was essential there should be close liaison throughout with the civil Mela authorities, and hence Headquarters of the Deputy Chief Engineer, Kumbh Mela was established adjacent to the Mela office and continued to be so throughout the Mela.

A lay-out plan of the Mela was produced by the civil authorities, and this is attached as Appendix 'A'.

STORES

It was vital that all items of equipment released for the various tasks, including expendable stores, arrived in time to complete the tasks on schedule.

The first wagon containing Bailey equipment arrived on 21st November. Even though wagons were arriving after this date at the Allahabad yard, the railways were unable to place them on the Engineer Dump siding due to congestion in the yard, as supplies for various departments had also arrived. The construction of the Sangam Railway Station and its many sidings made it difficult for the railways to place the wagons on the siding.

A total of 25 sets of 130 feet D/D Bailey bridge, $7\frac{1}{2}$ sets of Bailey pontoon 266 feet, 14 sets of erection gears and expendable stores were received in the Engineer Dump for the Kumbh Mela Project. All this equipment was received by items and not in sets. Heavy parts of equipment like pontoons, panels, transoms and stringers were received in the beginning and were then followed by small stores. A total of 570 wagons were received.

Stores were issued to units by items and not by sets. In order to avoid double handling of stores, arrangements were made with the railways to place, wherever it was possible, the required number of wagons at construction sites. Other stores were unloaded in the Dump. Heavy equipment like panels, transoms, stringers and pontoons were loaded on vehicles direct from the wagons and despatched to work sites. Small stores were unloaded in the Dump, checked and issued to units.

A chart was maintained in the Dump to show demand/issue to units at various construction sites. In the case of pontoon bridges the demand had to be changed many times due to the change in the water gap. Beside this, another chart was maintained to show release, receipt and the balance to be received from various depots.

25 APBVS from 682 Field Park Company and 10 from 40 AB Field Park Company and a platoon of a Civil General Transport Company were placed under the Command of OC Engineer Dump. All these vehicles were parked in the Administrative Camp which was about two furlongs away from the Engineer Dump. A wireless link was established between the Camp and the Dump and vehicles were called into the Dump only when they were required. Heavy parts of equipment were transported on APBVS, while small parts were loaded on 3 tonners.

All heavy stores were unloaded by two RB 195 and 2 Coles Cranes. Unloading at construction sites was done by unit cranes.

The Engineer Dump was authorised to employ a maximum of 200 mazdoors. This labour was employed on unloading small stores from wagons, and for their loading into vehicles. This labour was also used for the maintenance of stores. Unloading during the night was done by Sappers, and for this purpose a party of 1 NCO and 25 Sappers was always kept ready.

ERECTION OF OVERHEAD BRIDGES

The sites for the overhead bridges were at, or near road/rail crossings, Grand Trunk Road, Fort Road, Cemetery Road and Lowther Road. The railways' requirements were:—

- (a) Height of overhead section must not be less than 18 feet from top of the rails.
- (b) Minimum clearance to be 5 feet on either side of the rails.
- (c) Gradients of ramps not to exceed 1 in 5.
- (d) To pass 20,000 pedestrians at peak periods every half hour.
- (e) To be able to support a mass of slowly moving people packed close together : a load of 120 lbs/square foot was decided upon.

The original plan was to have two single way overbridges on Grand Trunk Road and Fort Road, as the greatest traffic was expected on them, and one single way each on the Cemetery Road and Lowther Road

crossings. All these bridges were to be straight through bridges improvised from standard Bailey equipment. The bridges were to have :—

- (a) Two 20 feet towers at right angles to the railway line at a distance of 30 feet between them.
- (b) Two 10 feet high piers 20 feet square to carry 50 feet S/S ramps from tower to pier and pier to ground.
- (c) The ramps at their ends were to have an extra panel each on the outside to give support to the verticals in panels for shear.
- (d) A 30 feet S/S overhead section to connect the two towers.

The construction, on the basis of this design, was rehearsed in November and, arising from these rehearsals, certain minor alterations were considered necessary but the design was basically adhered to. The alterations were :—

- (a) Instead of two separate single carriage-way bridges at Grand Trunk and Fort Road, one dual carriage bridge was designed to save in equipment.
- (b) So that the entrances and exits of the bridges were not too far from the main road and, to save large scale demolitions, a right angle turn was introduced. This was at the 20 feet tower in the Grand Trunk Road dual carriage-way overbridge and at the 10 feet pier in the Fort Road dual carriage-way overbridge.
- (c) A 'U' shaped design was used on the Lowther Road single way bridge due to restricted space.

Launching was not done as in normal Bailey construction, but girders of 5 panels each for the ramps were connected to the towers. For the ramps, the 50 feet girder was lifted at its centre by the Coles Crane to the maximum, and by means of reins at one end was pulled down and the top pinned to the pier. Then the free end was lowered to the ground and then lifted and pinned to the lower pier.

No base plates or bearings were placed on the piers as normally done. The ramps were pinned directly on the piers, and the top of the piers decked directly and used as the roadway.

Separate piers were constructed at turnings. These were not connected to the main bridge except by decking. For these separate piers on

the side away from the ramps, a false wall of Bailey panels was constructed so that a panel formed the hand-rail and also provided support for decking.

The piers were carefully designed and positioned so that transoms did not foul.

Directly under the chesses on the overhead section, corrugated iron sheets were laid to prevent timber catching fire from sparks from railway engines passing underneath.

Reinforcement chords from B.S.B. sets were used to connect the top chords of the ramp panels over the piers, as normal panels could not be used to connect the sloping girders.

The space between the reinforcement chords and the decking had to be filled to prevent accidents. This was done as follows—

Grand Trunk Road Bridge	.. By a timber frame work.
Fort Road Bridge	.. By ARC Mesh.
Lowther Road Bridge	.. Angle and flat-iron were welded on the design of a Bailey panel and attached to the chord.

At turnings, difficulties existed in fitting transoms and stringers, and hence of placing decking. To overcome this, angle and flat-iron pieces were welded to make a special stringer on which improvised decking was placed. Improvised 'U' bolts were used to connect transoms. In the dual carriage-way bridges angle-iron railings were improvised and fitted between the lanes as it was impossible to fit panels.

At points where ramps joined the towers, the top chord of the panels was joined together with two launching links fitting into one another. Though this did not take any of the strain, it assured continuity of line.

For the full length of the bridge, footwalks were placed along the ribbands. These rested on the panels to which they were tied with binding wire. This was done to prevent pilgrims and children being pushed through the panels.

DISMANTLING OF THE OVERHEAD BRIDGES

Work on dismantling the Grand Trunk Road and Cemetery Road bridges was started on 5th March 1954. Dismantling was almost finished

by the morning of 6th March. Troops employed were 3 Officers, 5 JCOs and 96 OR ; mechanical equipment employed was one Coles Crane and the total time taken in dismantling both bridges was 31 hours in two shifts of 12 and 19 hours each.

A Coles Crane was used for dismantling the ramps and upper storeys on the piers of both the bridges and the centre overhead section of the Grand Trunk Road bridge with the Coles Crane mounted on a platform.

Fort Road Bridge— 15 Field Company was given the job of dismantling this bridge and employed 2 Officers, 3 JCOs and 96 OR and 1 Coles Crane. They commenced work on 5th March and completed the task on 6th March. The Coles Crane was used to dismantle the ramps while davits were used to lower the centre section.

Lowther Road Bridge — The dismantling of this bridge was given to 372 Field Company. They employed 2 Officers, 3 JCOs and 60 OR and 1 Coles Crane. They started work on the morning of 5th March and completed the work by 1330 hours on 6th March. The ramps and centre section were lowered with a Coles Crane.

LESSONS LEARNT

For this type of construction, the employment of the R.B. 19 would save half the time of construction. This is because it can lift higher, can be positioned more easily and can serve a longer area from one position than the Coles Crane.

It is most important to carry out a sound initial survey and accurate levelling, alignment and lay-out. This is to ensure that sloping ramps can fit into the piers without difficulty.

The girders of the ramp should first be fitted to the higher pier. If there is a slight difference in distance noticed while fitting the lower pier, it can then be shifted with crowbars.

This was the first time when a Bailey had been put to such use. It showed the versatility of this type of equipment and the possibility of putting it to a large number of special uses. Special training for troops, is not necessary, but a rehearsal before construction will save time and mistakes.

A large number of transoms on the piers are undesirable. They take a lot of time in dismantling, and a few transoms with sway bracing would in any case provide the requisite rigidity.

BAILEY PONTOON BRIDGES

State of the River— The river Ganga was flowing originally with a width of 1200 feet, a current of approximately 4 knots, and a depth of 9 feet on the home bank and 2 inches to 6 inches water for 600 feet on the far bank. The current flowing on the home bank was cutting the bank very rapidly. To stop this cut, the PWD built spurs of 50 feet to 150 feet in length at regular intervals along the bank. In addition, the Army also helped by placing tripartite pontoons 20 deep in two batches. The effect of this was that, although the cutting did not stop completely, it was retarded to a great extent.

For bridges Nos. 1 and 2, the far bank suited a HFB construction, as the bank was shelving and sand banks had formed for 600 feet from the far bank with only 2 inches to 6 inches water. For this an approach road bound 24 inches high was made to the bridge ramps. Except for two extensions, this bound held till after the 3rd February.

Bridge No. 3, which was originally the shortest, had a landing bay design on the far bank. This was necessary as the river was the narrowest at this point, that is, it formed a waist with a greater width upstream and again a wider stretch down stream at Nos. 1 and 2 bridge sites. This made No. 3 bridge the shortest and the approach road the longest and, therefore, to ensure safety if the rise and the width increased, a 110 feet T/S Landing Bay was constructed. Consequently, one side of the bank seat was safe while the other was eaten away, and the time taken to jack up, pull back and float in more bays was long and tedious. At one time there was but 30 minutes between the completion of the job and the river flowing under the old bank seat. It is suggested that, as far as possible, a HFB should be designed for rivers of this kind with shelving banks.

Class of Bridge — The bridges were to be designed for a load of 120 lbs per square foot, and it was foreseen that on rush days this load would be almost static, leaving no room for articulation between bays. Therefore, a floating bay of 42 feet supported by 2 tripartite pontoons would be carrying a load of approximately 28 tons against the pontoon buoyancy of 29 tons. But in the case of a 110 feet landing bay supported by a class

40 landing bay pier, the load on $\frac{1}{2}$ the landing bay plus $\frac{1}{2}$ the end floating bay would be approximately 60 tons against the pontoon buoyancy of 58 tons. This looked unsafe, but actually the free board was reduced from 8 inches to 6 inches which is permissible if the current is not too fast.

Based on these facts, it was decided that the design of all the Army bridges would be class 40 and, in actual fact, all the risks were borne out in practice, and the bridge took the peak loads well.

The bridges at peak periods were discharging 17,000 pilgrims per hour for 12 hours at a stretch, and a pilgrim took 15 minutes to cross a 400 feet bridge.

Change of Design—Owing to the change of the course of the river and the river rising, the bridges had to be lengthened.

The usual difficulty was either that the bank seat would be scoured, or an intermediate pier would sink, giving the bridge a twist and necessitating the introduction of pontoon floating the span and increasing the bridge. The following shows the change in the bridges due to the change in the river:—

Bridge No. 1.

Original	Final
565 feet composed of a landing bay home side and HFB for far side with 2 spans on crib piers.	600 feet with the increase of floating bays and floating dry spans.

Bridge No. 2.

Original	Final
487 feet including landing bay on home bank and HFB on far bank.	750 feet with same construction with increase of floating bays only

Bridge No. 3.

Original	Final
386 feet including landing bays on both sides of the river.	1200 feet with landing bays on home bank side and HFB on far side.

Owing to the silting up of the river bed, it was found that anchors left in the river for over 24 hours were lost, and were impossible to retrieve. As military anchors were too expensive to lose, civil anchors were used

on all the military bridges. They consisted of ballies fixed together pyramidal fashion, with the pointed end of the ballies at the base and the centre filled with 50 sand bags. These anchors were very good, and served our purpose well. The only snag was that they were very heavy and bulky and their casting from pontoons was a problem; but with practice the Sappers became quite proficient at this job. The holding capabilities of both type of anchors were the same, but the civilian pattern improved by the rapid silting up action of the river.

Maintenance—From experience it was found that a maintenance party of one JCO and 12 OR was required on each bridge, and this party stayed on the site for 2 months. Their normal jobs were as laid down in R.E.S.P.B. No. 3 but besides that, the most important and laborious was the maintenance of the approach road bund, which, towards the end, was cut away by the river and had to be maintained by sand bags.

Maintenance of the bridges due to the heavy pilgrim traffic over long periods was a difficult task, as there was no question of stopping traffic. Night work was the order rather than the exception and, with pilgrims starting to use the bridge from 0300 hours every morning, it can be appreciated that the period just before, during and after peak days was a real trial to the maintenance parties on the bridges.

Water Pipe and Telephone Lines—The civil authorities were permitted to use the military bridges to take their water pipes and telephone lines across the river. Although this did not appreciably alter the load, it did hinder the quick dismantling of the bridges for extension, and a leaking pipe was quite a problem, especially when it leaked on an open pontoon. The following were the lines taken across the river.

- 2 4-inch water pipe lines across No. 3 Bridge.
- 1 4-inch „ „ line „ „ 1 Bridge.
- 1 No. 100 pair telephone lines across No. 2 Bridge.

Lighting—The lighting of the bridges was fairly simple. The points that were borne in mind were:—

- (a) There should be no overhead wiring.
- (b) The lights should be high enough and close enough to light up the whole bridge. Searchlights were also fitted at each end of the bridges which assisted the maintenance parties in checking the pontoons.

Dismantling—The bridges were dismantled in the usual manner and offered no difficulties.

Conclusion—The bridges were a great success, in that the civilians preferred to use the military bridges due, I presume, to their obvious stability, width and protection from the sides (the civil bridges had chains on the sides with a width of 8 inches), and the military bridges were the only ones which could take the processions of *sadhus*, with their elephants and cars. Also, all civil 3 tonners had to use the military bridges as the civil bridges could not take this load.

In future Kumbhs it is felt that two additional bridges should be constructed, as all six bridges were congested and injuries were caused to pilgrims in their rush to get across them.

Control Towers

The purpose of the control towers was to enable the police to:—

- (a) control vehicular and pedestrian traffic,
- (b) serve as watch towers for giving early warning of any fire in the Mela area,
- (c) to report any untoward incidents.

Two of the larger towers were used for sight seeing, in addition to their normal function as control towers.

The location of the control towers as given in the layout plan of the Mela was:—

On Bund and Triveni Road Crossing.

On Bund and Parade Road Crossing.

Near Parade Police Station.

Two towers on the home bank overlooking the Sangam.

All the towers were six storeys high, with double panels in each truss, except the top storey which had single panels serving as hand-rails. The bottom storey was embedded upto 3 inches into the ground to give stability to the structure and to avoid the use of grillage. This gave us the top platform at a height of approximately 24 feet from the ground.

The platform was used by sentries and had a floor area of 10' x 10' 9". Decking was also provided at 14 feet height which served as living

accommodation for the police. Two improvised *ballie* ladders provided access to the top in two stages. Two chesses from each of the two stages were removed and the gap was subsequently covered up by improvised chesses with a trap-door opening upward. Improvised angle iron frames were fitted on to the ends of top panel as a railing.

In the larger type of tower, the top platform at 24 feet height was 20' x 30'. A false bay 10' x 10' 9" and 14 feet high was constructed on either end to take an improvised box type wooden ladder in two stages to provide access to the top. All the open ends were closed by wooden hand-rails.

DOZING OF THE RIVER BANK

The home bank of the river Ganga was almost a vertical face, the height of which varied from 15 to 30 feet; at places due to scour it was overhanging.

It was impossible for the pilgrims to get down to the river unless the banks were dozed down to a reasonable slope. Hence it was decided to doze the home bank of the river to a slope of 1 in 5 from the confluence to one mile upstream.

The task was allotted to 753 Plant Platoon with orders to make two trial slopes. Two sites were chosen at a distance of 200 yards apart and 50 yards wide.

The machines allotted were two Size II tractors and one Size I tractor. These were the only machines available at the time, and the choice of Earth Moving Plant was therefore restricted.

During trials it was found that after the top hard crust of 2 feet was cut, the soil was unstable due to its large moisture content and high percentage of silt. As a result, excavation at the bank had to be stopped to allow the earth to dry before the final slope was made. As the height was reduced, large cracks appeared, and the heavier Size I tractor could not approach the edge of the bank, so work had to be carried out by the Size II tractors. Apart from this draw back, the current of the river had to be taken into account. The more earth one pushed over the top, the more was carried away.

It was essential that the scouring of the bank was either stopped completely, or reduced appreciably in order that this work could be of

value. The PWD were directed by the civil authorities to construct a series of spurs at intervals of 100 feet, and work on sloping the banks was then carried out.

In places where the scour was most severe, there was a danger of the bank crumbling under the slightest vibration caused by the travel of Earth Moving Plant. This necessitated the use of explosives. Ammonal was used, and the charge varied from 51 lbs to 25 lbs. The use of the camouflet presented no problem as the soil was soft. This task was successfully carried out by a platoon of a field company.

The final dressing down of the slope was done by two motor graders and when the task was finished it looked like a huge amphitheatre.

The total number of machines used on this work was :—

Size I Tractors 3

Size II Tractors 6

Motor Graders Caterpillar .. 2

Blade Grader 1

The number of working hours of each type of tractor was as follows :—

Size I Tractor 286 hours

Size II Tractor 625 hours.

LOAN ISSUES OF STORES TO CIVIL

The original demand of various stores and equipment were periodically reviewed.

The stores issued to the civil were :—

8 Fire Trailer Pumps complete.

8 Hand Sirens.

100 I.P Private Tents.

150, 80 lbs Tents.

8, No. 46 Wireless sets with 16 batteries.

In addition medical stores were supplied to the Health Department of the U.P. Government direct by Army Headquarters.

ADDITIONAL TASKS

Fencing—Large numbers of pilgrims visit the Ashyabakt temple located inside the perimeter of the Fort, and the usual narrow passage which is used throughout the year was incapable of carrying them; moreover, it was necessary that a one-way route was provided. Hence it was necessary to allow the pilgrims entry into the Fort through one of the gates and, in order to ensure security of the Fort, a barbed-wire fence on *ballies* was necessary for approximately 200 yards. The fence was erected, and it was patrolled throughout its length by military policemen. The civil police were wholly responsible for regulating the entry of the pilgrims, and this they successfully carried out in spite of the vast crowds that assembled by allowing a limited number of pilgrims entry into the Fort by the use of a series of 'pens' constructed of *ballies* and cordage.

Platform—A platform was specially prepared on the ramparts of the Fort to enable the President of India to view the whole Mela. This work was carried out by the Garrison Engineer. Adjoining rooms were also prepared as a rest room for the President and his party.

Sand Model—In the control room, a sand model to scale was made by the Sappers on which were clearly shown the various roads, police stations, and outposts, first-aid posts, hospitals, administrative offices and the various Akharas' camps. This sand model was of great assistance to the civil administration.

Launch—A 'J' launch was released by Army Headquarters. The launch was used to transport the Prime Minister from one of the Ghats about a mile upstream of the Sangam, to a Bailey raft located about 400 feet from the Sangam from which place he proceeded in country boats to the Sangam.

The launch was also kept as a stand-by for rescue work, but the necessity for this did not arise.

DUKWS—Two DUKWS were received and these were tried out in the river but were found to be wholly unsatisfactory. At the initial trial in the river by the EME, one of them was grounded well and truly and, when the second was taken to retrieve the first, the result was that both were marooned in the river. Finally they were recovered without any damage by a D-7 Dozer winning them out of the river. The treacherous sand

banks and, the possibility of their being embedded in the river, ruled out their use during the Mela.

Transport—The following transport was located at various sites for use in an emergency:—

4 APBVs and 4×3 tonners were located in the Engineer Dump.

4 Jeeps were located in the bridge maintenance area on the home bank.

2 Jeeps were located in the Jhusi area.

This transport was used from time to time as necessity arose.

Storm-Boats—Four Storm-Boats fitted with 50 hp outboard motors were kept in readiness at all times at the site of Bailey Pontoon Bridge No. 1 to carry out rescue work and quickly transport police to any place along the river. The operators improved with experience, and had constantly to study the behaviour of the river and chart out channels through sand banks for their passage. L/Nk Kartar Singh and L/Nk Sant Ram on hearing that a boat had overturned with pilgrims used their initiative and quickly took the storm-boat to the area and rescued six persons from drowning by diving into the river and pulling them out from under the overturned boat. They also righted the overturned boat and brought it to the surface.

At times the outboard motor would not start, and consequently the storm-boat would be carried swiftly downstream; at times the boat was grounded. They were also used during the initial stages by various officials and inspecting officers and many of them were made aware of the vagaries of the outboard motor including Mr. Allen the U.S. Ambassador, and the Chief Minister of U.P.

TRAFFIC CONTROL AND RESCUE WORK

It was foreseen that the bridges would be the main bottleneck for pilgrims crossing from one side of the river to the other and, as such, to ensure that no death or untoward incident occurred on the military bridges, approximately 300 Sappers were employed on 2nd February and 400 on 3rd February on the approach to the bridges to help channelise the flow of pilgrims on the bridge. This was found to be a most difficult and tiring job, as the Sappers had to try and persuade the heavy mass into comparatively narrow lanes. To help in this work, on the night of 2nd/3rd

February, barriers of *ballies* were erected on the approach, tied with cordage and policed with Sappers five feet apart. This helped, and more order was obtained on 3rd February. The allotment of tasks on 3rd February was as follows :—

One Company (100 men) on approach to No. 1 bridge.

One Company (100 men) on approach to No. 2 bridge.

One Company (100 men) on approach to No. 3 bridge.

One Company (100 men) in reserve in the Military Maintenance Area to be used as reliefs and as reinforcement.

It was found that generally speaking, injuries to the pilgrims on the approach to the bridges occurred in two ways. Firstly, due to the heavy rush, the pilgrims did not approach the bridge directly but converged from all sides and, when they tried to force their way on to the bridge from the sides, they were jammed against the end posts. Secondly, due to a slight fall of rain on 2nd February the approach ramps became slippery and pilgrims fell and were trampled on, causing injuries. To avoid the first, all efforts were made to channelise the traffic; and for the second, after a fall of rain the decking and approaches to the bridge were strewn with straw; this proved very effective. There was no rain on 3rd February and the ground was not slippery.

Even with all these precautions, injuries did occur and numerous incidents were noted where Sappers jumped into the seething mass to pull out some poor pilgrim who had fallen down and was in danger of being trampled to death. All these cases were evacuated to the Military M.I. Room which was in the Bridge Maintenance Area. The total number of cases admitted to the M.I. Room including cases of fainting was 200 on 2nd February and 300 on 3rd February; none of these proved fatal.

MISSING PERSONS BUREAU

The influx of pilgrims into Allahabad and the Mela area began towards the end of January and, as their numbers increased, there were daily a number of cases of persons that were separated from the remainder of their parties but, as numbers were small, announcement over the central loud speaker system and timely action by the police proved effective. On 3rd February, due to the vast concourse and, possibly because of the 'stampede' incident, the number of persons that were separated or lost increased, and the whole area of the control room was besieged by

literally thousands of pilgrims seeking information. The two or three clerks that were deputed to take particulars were swamped, and on 4th February at about 1100 hours the civil authorities called upon the army to take charge of the Missing Persons Bureau. This commitment was accepted, even though none of the officers had any experience of conducting such a bureau. It was apparent that in order to achieve any results, the then existing system of recording details of persons missing had to be done with some system and, also, it was necessary to introduce some order and discipline amongst the vast numbers of persons seeking assistance.

The bureau was organised and run by the Engineers as follows :—

A separate counter for each of the Provinces of India was set up and persons had to give full details at these counters. Sentries were posted at each counter to ensure that all persons formed a queue and came forward in an orderly manner. Particulars of the persons reporting, and that of the person missing were recorded and immediately broadcast ; firstly, on the local loud speakers covering the whole Mela area. These lists were then collected at the co-ordinating centre where lists were scrutinised to see whether the person reported missing had not also reported that the other was missing. Quite a number of such cases were detected, and happy reunions were witnessed at the bureau.

The various volunteer organisations gave shelter to lost women and children, and lists were obtained from such organisations, as also the list of injured in various hospitals in Allahabad and the Mela area, and these were compared with the list of persons reported missing.

To allay the anxiety of the public, specially after the stampede, the police were requested to submit photographs of the unidentified dead, and these were displayed at all police stations in the Mela area and the Central Control Room.

The list of injured at the various hospitals was released to the press on the evening of 4th February, and all local papers carried the complete list. Copies of these lists were also displayed at police stations.

The Sappers who were called upon to interrogate and record all types of people for long hours carried out their arduous task cheerfully and with zeal. The encouragement given by distinguished visitors and, in particular Mrs. Indira Gandhi, who at one time manned one of the counters was heartening and inspired the men to work harder. The vol-

unteers provided a number of personnel to assist the Army in the later stages, and finally the bureau was handed over to the police authorities on the evening of 6th February.

INTERNAL SECURITY

One Parachute Company, and one troop of armoured cars were earmarked for Internal Security and were located at Allahabad. Happily there was no occasion to use these troops on Internal Security duties. The Parachute Company, however, was used to regulate traffic at the entrance to the military pontoon bridges.

CONCLUSION

The successful completion of the various tasks was, in a great measure, due to the toughness, skill and determination of the individual Sapper to complete a task on time.

The strength of officers of any field unit was, on an average, two, and it was a strain on them in the planning, execution and subsequent maintenance period of three months coupled together with routine administration of the unit. It is creditable that they stood up to the strain and successfully completed their tasks.

The experience gained by these units that constructed the pontoon bridges, and subsequently maintained them for a period of three months during which there was constant change in the water level, current and the bed of the river was of great value, and this experience could not normally have been gained by any unit in an ordinary bridging camp.

It is hoped that this report may be of value to those who may be called upon to do a similar task. Indications are that this will not be the last of this type of work which the Corps of Engineers will be called upon to undertake in the future and, in their doing, they will be living up to the high traditions of the Corps "to be able to tackle any job anywhere"—fully in keeping with their motto—"Sarvatra".

REVIEWS**STRATEGY
THE INDIRECT APPROACH**

B. H. LIDDELL HART

Faber & Faber, 25/-

The doctrine of the "indirect approach" was first propounded by Liddell Hart in his book "The Decisive Wars of History" which was published in 1929. After the first edition, revised versions appeared under the titles, "The Strategy of Indirect Approach" in 1941, "The Way to Win Wars" in 1943 and again "The Strategy of Indirect Approach" in 1946. The book now appears under the modified title "Strategy: The Indirect Approach".

The present book is an up-to-date restatement of the doctrine of the indirect approach. It contains two appendices. The first "The strategy of indirect approach in the North African Campaign 1940-42" by Major-General Dorman-Smith appeared as a foreword in the earlier edition. The second is a strategical analysis of the "Arab-Israel War 1948-49" by General Yigael Yadin, Chief of the General Staff, Israel Forces. This is an interesting account of the application of the doctrine in the Arab-Israel War.

The importance of surprising the enemy in battle cannot be denied. The strategy of indirect approach aims at gaining surprise over the enemy on the strategic plane and undermining his will to fight by doing the unexpected which catches him mentally unprepared. This is done by directing the operations to follow the line of least expectation.

According to Liddell Hart the advantages of the indirect over the direct approach are applicable to all spheres of life where the human factor predominates. The indirect approach is as fundamental to the realm of politics and commerce as to sex.

In the military sphere the direct approach follows the expected course and meets with the hardening resistance of the enemy. The indirect approach by being unexpected dislocates the enemy's mental equilibrium and throws him off balance. In strategy the longest way round is the

shortest way home. In a masterly analysis of the major wars of history Liddell Hart proves that in almost all the campaigns the decisive result was won by the indirect approach—and that a great captain of war will prefer to take even the most hazardous indirect approach to the extent of cutting himself loose from his communications rather than accept the risk of frustration inherent in the direct approach.

It has been said that a man is never a prophet in his own land. Foreign students were more impressed with the views of Liddell Hart than his own countrymen. The German General Staff in particular adopted his teaching and applied them with astonishing success in the opening campaigns of World War II.

Today the theory of the indirect approach has acquired a greater significance. The destructiveness of war acts as its own preventive and nations are increasingly resorting to the indirect approach to gain their ends in the realm of grand strategy. Lenin said, "the soundest strategy in war is to postpone operations until the moral disintegration of the enemy renders the delivery of the mortal blow both possible and easy". The present cold war is merely another application of the same theory.

Liddell Hart's books are always thought provoking, and this is perhaps his best. Part IV of the book dealing with the fundamentals of strategy and grand strategy is a valuable contribution to the science of war. This part is remarkable for the clarity of thought and worthy of serious study by all students of military history.

J.N.

THE MEDITERRANEAN AND MIDDLE EAST

Volume I

I.S.O. PLAYFAIR

H.M. Stationery Office, 35/-

This is the first volume of the official British History of the Second World War dealing with approximately the first eighteen months in the Mediterranean and Middle East. The outstanding feature of this series of volumes is that the activities, successes and failures of the three Services are narrated together so that the reader gets a more complete picture of the campaign as a whole and not of the Army or the Navy alone. However, at times, this has broken continuity.

The volume opens with a detailed survey of the growing tension in the Middle East in the years preceding 1939 and the preparations for meeting a possible outbreak of war. Then follow the effects of the German successes in Europe on the situation in this region—particularly on the Mediterranean as a life-line between the East and the West; the events leading to the entry of Italy into the war and consequent opening of a number of fronts in this theatre in the various Colonies; the Italian advances in Egypt and Greece; the first offensive by Wavell's 30,000 and the magnificent work of the Royal Navy in successfully escorting convoys through the Mediterranean and in boldly attacking Italian shipping in ports; the background of the initial Greek hesitancy in accepting British help and their eventual decision to welcome it wholeheartedly; the great problem of proper allocation of resources for the new theatre, which could not help seriously affecting the wonderful exploits of Wavell in Cyrenaica; Hitler's unconcern in the early stages of whatever happened to the Italians and the subsequent arrival of the Luftwaffe in this theatre, and the German moves against Greece; and finally the successful British Campaign in East Africa and the Sudan resulting in the return of Haile Selassie to his throne and the clearance of threat to convoys in the Red Sea.

All this is covered in the 450 pages of the main body of the book divided into 23 chapters. At the end of each chapter is found a brief chronology of events. Then follow ten appendices in which important documents, particulars of aircraft used by both sides and names of Principal Commanders and Staff officers have been included. At the end is a comprehensive index running into almost 25 pages.

Balance has been maintained in the amount of detail throughout and the efforts of the three Services have been portrayed in the correct perspective. The compilers have described the background and the reasons "Why" of almost all important actions and decisions, which should be of real interest to students of military history. The growing importance of administration has been reckoned and would be discernible from these words: "administration is not the drab servant of the art of war, unworthy of mention in the same breath as a battle but that it is rather of war's very essence". The colossal logistical problems have been vividly presented.

The actions fought by the Fourth and Fifth Indian Divisions in this theatre are of particular interest to Indian readers.

There are a number of excellent coloured maps, which open out clear of the book and make it easy to follow the narratives. Over 40 photographs add colour to the book besides presenting the varied types of terrain and conditions in which the campaigns were fought.

On the whole this is an extremely useful book without which no military library will be complete. The publication of subsequent volumes should be eagerly awaited.

G.S.W.

ROYAL AIR FORCE 1939-45

Vol I by DENIS RICHARDS

Vol II by DENIS RICHARDS AND

HILARY ST. G. SAUNDERS

H.M. Stationery Office, 13/6 each

A history of the activities of the RAF during World War II has been written and is being published in three volumes. The books reviewed here are the first two. The authors were given full access to official secret documents, from those concerning the higher direction of the war down to the sortie reports of individual pilots. They have also drawn upon the records of the enemy and personal accounts.

Volume one starts with the first stirrings of rearmament in 1934 and ends with the close of 1941. The apathy of the British Government towards defence preparations had left Britain without proper and adequate defence forces by the time Hitler came to power in Germany. Hitler's ambitions served to put a spur to the slow British thinking and increased grants were made especially for the expansion of the RAF. The result was that by the time war broke out in September, 1939, the RAF was ready. The highlights in the book are the air battles of August and September 1940—what is more popularly called the Battle of Britain; the bombing of Coventry, the air-borne assault on Crete.

Volume two takes the story of British air operations and policy from the closing months of 1941 to the second half of 1943. It opens with an account of the early campaigns in the Far East where British defences in the air like those on the ground were far too weak to withstand Japanese

attack. After this the story moves back to Europe, first to trace the growing successes of the Coastal Command against German U-boats and shipping, then to examine the progress of the air offensive against the German homeland. The part played by the RAF in the winning of the North African Campaign is well brought out. The volume concludes with a survey of the air operations in the Italian Campaign. The many well-known incidents described in this volume are, the sinking of the Prince of Wales and the Repulse, the "Thousand Bomber" raid on Hamburg, the battle of El-Alamein and the bombing of Monte Cassino.

In spite of the fact that these volumes are official history, they are entertainingly written and hold the interest of the reader.

D.R.S.

CORRESPONDENCE**"THE MILLSTONE OF TRADITION"**

COLONEL F.C. MOLESWORTH

Culworth, Bideford, Devon, England

In your July 1954 number, in Major Nazareth's article 'The Millstone of Tradition' appears the hoary misstatement that Boer methods of warfare compelled the British troops to change from coloured uniforms to khaki.

All British troops from the very start of that war fought in khaki.

The last occasion on which any of our land forces went to a campaign in red uniform was in 1895 to Ashanti. Before that, khaki had been worn in the Sudan campaign of 1884, and in many small wars in India.

SECRETARY'S NOTES

Lectures and Discussions

On 28th August members met in New Delhi for a general discussion on current affairs led by Mr. V.K. Krishna Menon. On 3rd September Colonel L. Sawhny gave a talk on "The Functions of Management".

Corresponding Members

Commander M.L. Barua, I.N., has taken over as Corresponding Member of the U.S.I. at I.N.S. CIRCARS, Naval Base, Vizagapatam from Commander C.E. McGready, I.N., who has gone on transfer.

Gold Medal Essay Competition 1954

Eleven entries were received. The following awards have been made :—

Winner	.. Major J. Nazareth	Gold Medal
Runner-up	.. Major G.S. Wakankar	Rs. 200/-.

The winning essay will be published in the next issue of the Journal.

The three judges were Brigadier P.P. Kumaramangalam, DSO, Instructor Captain E.F.R. Byng, RN and Group Captain M.S. Chaturvedi, IAF.

Elections to the Council

As a result of the elections to the Council for 1954-55 the following twelve have been elected, names being given in alphabetical order :—

1. Air Commodore Arjan Singh, DFC, IAF, 2. Brigadier B.S. Bhagat, 3. Brigadier B.M. Kaul, 4. Commander N. Krishnan, DSC, IN, 5. Air Commodore P.C. Lal, DFC, IAF, 6. Brigadier Moti Sagar, 7. Lieut.-Colonel D.K. Palit, Vr. C., 8. Brigadier Rajinder Singh Paintal, 9. Captain B.A. Samson, IN., 10. Major-General L.P. Sen, DSO, 11. Major-General Th. Sheodatt Singh (Retd.), 12. Major-General S.D. Verma.

Changes of Address

Members are again reminded that changes of address are to be notified immediately to the Secretary's Office.

Back Issues of the Journal

Captain S.D. Shukla, 4-A Park Road, Lucknow, requires the following back issues of the Journal. Any reader who can supply any of the numbers will please get in touch with him direct:—

No.	302	January	1941
„	304	July	1941
„	312	July	1943
„	320	July	1945

New Members

From 1st July to 30th September 1954 the following members joined the Institution:—

BAINS, Major H.S., Signals.
 BARUA, Commander M.L., I.N.
 BHAGAT, Flight/Lieut. H.S., I.A.F.
 CHIBBER, Captain M.L., 5 Gorkha Rifles (F.F.).
 DALJEET SINGH MAJOR, The Assam Regiment.
 DANG, Captain S.K., Artillery.
 DUKE, Captain M.A., A.S.C.
 HARJIT SINGH, Major, Signals.
 KABAL SINGH, 2/Lieut., Artillery (T.A.).
 *KANWAR, Lieut. S.C., I.N.
 KEWAL KRISHAN, Captain, M.E.S.
 KURIYAN, Flight/Lieut. V., I.A.F.
 *KUSHAL PAL SINGH, Brigadier.
 MALHOTRA, Lieut. A.S., A.M.C.
 MATHUR, Major R.C., 8 Gorkha Rifles.
 MAYOR, 2/Lieut. J.K., E.M.E.
 MCGREADY, Commander C.E., I.N.
 PRASAD, Captain O., Signals.
 RAGHUVANSHI, Pilot Officer R.S., I.A.F.
 RANJAN DUTT, Group/Captain, Vr. C., I.A.F.
 SANWAL, Esq., B.D., I.C.S.
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 VARMA, Flight/Lieut. S.C., I.A.F.
 VELLODI, Esq., M.K., I.C.S.

SUBSCRIBING MEMBERS

Three Officers' Messes and Units were enrolled as subscribing members during this period.

* Life Members.

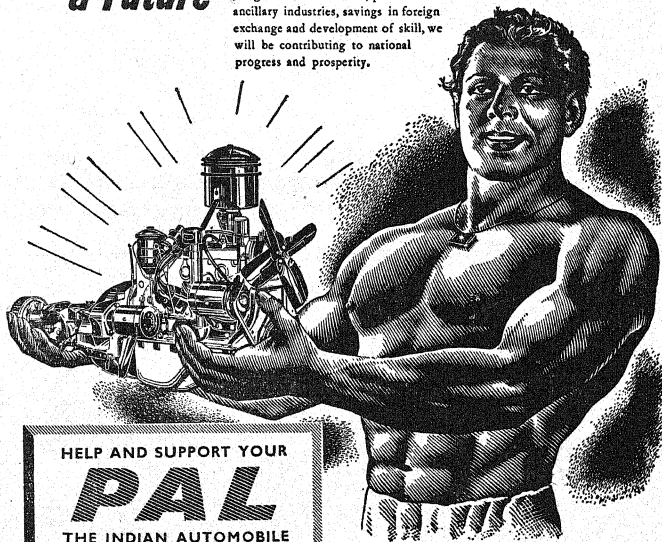
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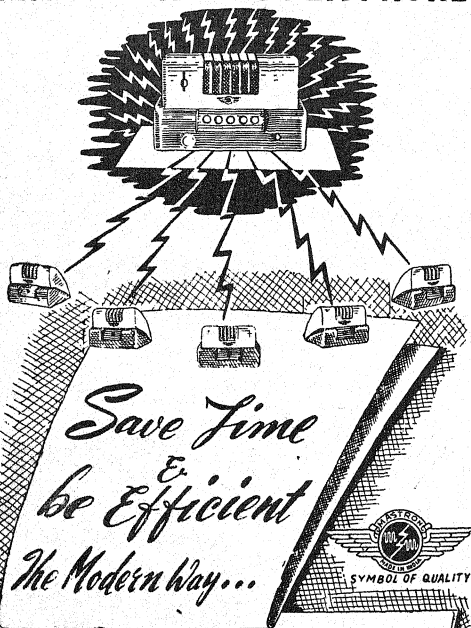


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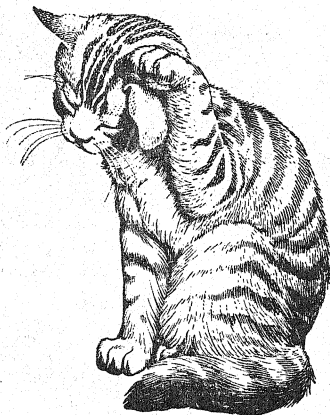
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residue left after distillation into the cat-cracker, and get an additional and necessary component of petrol. So first, distil your crude oil and you get "straight run" petrol. Then feed some of what's left into the cat-cracker—and you get some more petrol of a different quality. Blend the two together—and you get petrol for the pumps.

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